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ABSTRACT

This study examined the interrelationships between principals of individually guided education/multi-unit elementary schools, the organizational structure of these schools, and the effectiveness of the schools' instruction and research units. The study attempted (1) to determine the relationship between principal behavior and the instruction and research units, (2) to determine the relationships between principal behavior and the organizational-structural dimensions, and (3) to determine the relationship between the organizational-instructional dimensions and the instruction and research units. The results indicate both support and rejection of the hypotheses proposed and reveal a variety of significant and non-significant relationships. (DW)

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Technical Report No. 320

RELATIONSHIP OF PRINCIPAL LEADER BEHAVIOR AND ORGANIZATIONAL STRUCTURE OF THE IGE/MUS-E TO I AND R UNIT EFFECTIVENESS

Report from the Project on Organization for Instruction and Administrative Arrangements

by Gary William Gramenz

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STATEMENT OF FOCUS

Individually Guided Education (IGE) is a new comprehensive system of elementary education. The following components of the IGE system are in varying stages of development and implementation: a new organization for instruction and related administrative arrangements; a model of instructional programing for the individual student; and curriculum components in prereading, reading, mathematics, motivation, and environmental education. The development of other curriculum components, of a system for managing instruction by computer, and of instructional strategies is needed to complete the system. Continuing programmatic research is required to provide a sound knowledge base for the components under development and for improved second generation components. Finally, systematic implementation is essential so that the products will function properly in the IGE schools.

The Center plans and carries out the research, development, and implementation components of its IGE program in this sequence: (1) identify the needs and delimit the component problem area; (2) assess the possible constraints--financial resources and availability of staff; (3) formulate general plans and specific procedures for solving the problems; (4) secure and allocate human and material resources to carry out the plans; (5) provide for effective communication among personnel and efficient management of activities and resources; and (6) evaluate the effectiveness of each activity and its contribution to the total program and correct any difficulties through feedback mechanisms and appropriate management techniques.

A self-renewing system of elementary education is projected in each participating elementary school, i.e., one which is less dependent on external sources for direction and is more responsive to the needs of the children attending each particular school. In the IGE schools, Center-developed and other curriculum products compatible with the Center's instructional programing model will lead to higher morale and job satisfaction among educational personnel. Each developmental product makes its unique contribution to IGE as it is implemented in the schools. The various research components add to the knowledge of Center practitioners, developers, and theorists.

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A debt of gratitude is extended to the United States Office of Education, which provided financial support for the author's graduate study, and to the Wisconsin Research and Development Center, which provided financial support for the author's dissertation research.

Finally, to my wife, Karen, a special word of thanks for providing patience and moral support throughout the course of this study

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ABSTRACT

This study was designed to investigate the interrelationships between the leader behavior of IGE/MUS-E principals, the organizational structure of IGE/MUS-Es as measured by their degrees of centralization, formalization, and stratification, and the effectiveness of the I and R units. The framework for the study was drawn from social systems theory, leadership theory, and Hage's axiomatic theory of organizations.

The primary purpose of the study was to determine which of the independent (predictor) variables--principal leader behavior and the organizational-structural dimensions--related significantly to the dependent (criterion) variable, I and R unit effectiveness. The specific problems addressed by the study were first, to determine the relationship between principal leader behavior and I and R unit effectiveness; second, to determine the relationship between principal leader behavior and the organizational-structural dimensions; and third, to determine the relationship between the organizational-structural dimensions and I and R unit effectiveness.

In addition, five ancillary questions were posed which dealt, respectively, with differences between the perceptions of principals, unit leaders, and unit teachers with regard to the real and ideal leader behavior of principals, the organizational-structural dimensions, and I and R unit effectiveness; and the relationship between school size (number of students) and the independent and dependent variables.

The survey instrument used in this study consisted of three sections: (1) Principal Leader Behavior Description, (2) Organizational Structure, and (3) I and R Unit Operations Questionnaire. Pearson product-moment correlations and stepwise linear regression analysis were utilized to test the hypotheses, one-way (fixed-effects) analysis of variance to test ancillary questions one through four, and Pearson product-moment correlations to test the final ancillary question.

The major conclusions were:

1. With the exception of the correlation between the degree of formalization and I and R unit effectiveness, there were no significant relationships between principals' perceptions of the independent and dependent variables, nor were any of the independent variables significant predictors of unit effectiveness. Nevertheless, the organizational mean of formalization, which explained 9.46 per cent of the variation of the dependent variable, is of substantive interest.

2. With the exception of the correlations between (a) the instrumental and supportive leadership effectiveness of principals and the degree of centralization and (b) those between supportive and participative leadership effectiveness and the degree of formalization, there were significant relationships between unit leaders' perceptions of the independent and dependent variables. In addition, the organizational-structural dimensions were significant predictors of I and R unit effectiveness. Formalization and centralization were of nearly equal potency to the regression equation, whereas stratification was somewhat less potent.

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3. With the exception of the correlations between the supportive and participative leadership effectiveness of principals and the degree of formalization, there were significant relationships between unit teachers' perceptions of the independent and dependent variables. In addition, the organizational means of centralization and formalization and the instrumental and supportive leadership effectiveness of principals were significant predictors of I and R unit effectiveness. Centralization was the most potent variable in the regression equation, followed by formalization and supportive leadership effectiveness, which were of nearly equal potency, and instrumental leadership effectiveness.

4. There were significant differences between (a) perceptions of principals and unit leaders with regard to the ideal instrumental leader behavior of principals, (b) perceptions of principals and unit teachers with regard to the real supportive leader behavior of principals and the degree of stratification, and (c) perceptions of principals and unit leaders, and principals and unit teachers, with regard to the real participative leader behavior of principals and the degree of centralization. In addition, there was a significant relationship between school size and the three reference groups' perceptions of the degree of centralization.

CHAPTER I

INTRODUCTION

This study was designed to investigate the interrelationships between the leader behavior of individually guided education/multi-unit elementary school (IGE/MUS-E) principals, the organizational structure of IGE/MUS-Es as measured by their degrees of centralization, formalization, and stratification, and the effectiveness of the Instruction and Research (I and R) units. The primary purpose of the study was to determine which of the independent variables--principal leader behavior and the organizational-structural dimensions--related significantly to the dependent variable, I and R unit effectiveness. The specific problems addressed by the study were first, to determine the relationship between principal leader behavior and I and R unit effectiveness; second, to determine the relationship between principal leader behavior and the organizational-structural dimensions; and third, to determine the relationship between the organizational-structural dimensions and I and R unit effectiveness.

Related Literature

The review of the literature is presented in four sections: (1) that dealing with social systems theory, (2) that pertaining to leadership theory, (3) that concerned with organizational theory, and (4) that related to I and R unit effectiveness.

Social Systems Theory

Social systems theory, which views organizations from a social-psychological perspective, provides a viable means for analyzing group behavior. The social systems model (Figure 1) depicts social behavior as a function of:

> . . . institution, role, and expectation, which together constitute . . . the nomothetic or normative dimension of activity in a social system; and individual, personality, and need disposition, which together constitute the idiographic or personal dimension of activity in a social system.[1]

According to the model:

> A given act is conceived as deriving simultaneously from the normative and the personal dimensions, and performance in a social system is a function of the interaction between role and personality. That is to say, a social act may be understood as resulting from the individual's attempts to cope with an environment in ways consistent with his own pattern of needs and dispositions. Thus we may write, by way of a shorthand notation, the general equation $B = f(R \times P)$, where B is observed behavior, R is a given institutional role defined by the expectations attaching to it, and P is the personality of the particular role incumbent defined by his need dispositions.[2]

For the purpose of this study, the local school was taken as the unit of analysis or focal social system. The normative dimension of the school is represented by the leader behavior of the principal and the idiographic dimension by the need-dispositions associated

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[1] Jacob W. Getzels, "Administration as a Social Process," in Andrew W. Halpin (ed.), ADMINISTRATIVE THEORY IN EDUCATION, (New York: Macmillan Company, 1967), p. 152.

[2] Jacob W. Getzels, James M. Lipham, and Roald F. Campbell, EDUCATIONAL ADMINISTRATION AS A SOCIAL PROCESS: THEORY, RESEARCH, PRACTICE, (New York: Harper and Row, 1968), p. 80.

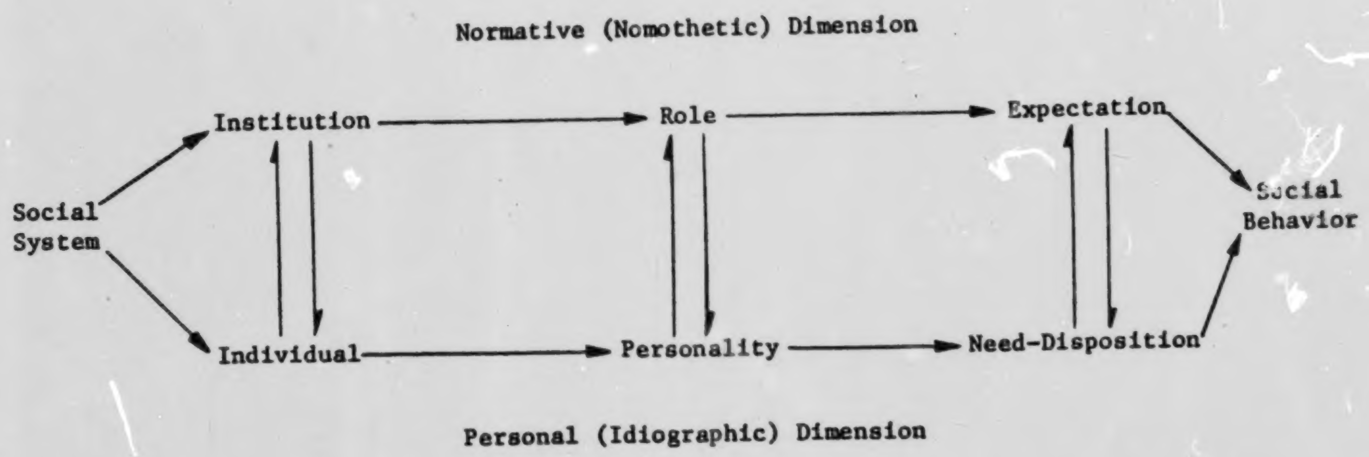

Figure 1. The Normative and Personal Dimensions of Social Behavior.

(Adapted from J. W. Getzels and E. G. Guba, "Social Behavior and the Administrative Process," SCHOOL REVIEW, 65 [1957], 429.)

with the personality of the principal.

Moser, in a study of the leadership patterns of school superintendents and principals, delineated the relationship between the expectations held by administrators and teachers for their respective roles and measures of effectiveness and satisfaction:

> The satisfaction of teachers with the school system in which they work [depends] upon the extent to which teachers perceive that the behavior of their administrators meets their expectations. Conversely, the administrator's ratings of teacher effectiveness depends upon the administrator's perception of how well the teacher conforms to his expectations for the teacher role.[3]

Specifically, Moser stated that the principal behaves in one way with his superiors (the nomothetic style, emphasizing goal accomplishment, rules and regulations, and the precedence of centralized authority over the needs of organizational members) and in another way with his subordinates (the idiographic style, emphasizing few rules and regulations, placing value on people qua individuals, and the presence of individualistic relationships between superordinate and subordinate). The superintendent gave the highest effectiveness ratings to those principals whom he perceived as exhibiting transactional behavior (the judicious utilization of nomothetic and idiographic behavior as the occasion demanded).[4]

Associated with the nomothetic dimension, the idiographic dimension, and the interaction between the two dimensions are three types of conflict, which generally may be defined as "the mutual interference of parts, actions, and reactions":[5]

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[3] Robert P. Moser, "The Leadership Patterns of School Superintendents and School Principals," ADMINISTRATOR'S NOTEBOOK, 6 (September, 1959), 1.

[4] *Ibid.*, 1-4.

1. Role conflicts occur whenever a role incumbent is required to conform simultaneously to a number of expectations which are mutually exclusive, contradictory, or inconsistent, so that adjustment to one set of requirements makes adjustment to the other impossible or at least difficult.

2. Personality conflicts occur as a function of opposing needs and dispositions within the personality of the role incumbent himself.

3. Role-personality conflicts occur as a function of discrepancies between the pattern of expectations attaching to a given role and the pattern of need-dispositions characteristic of the incumbent of the role.[6]

The theoretical framework of conflict, which was set forth by Parsons,[7] has found its major recent contributor in Getzels.[8] Getzels, Lipham, and Campbell identified three major types of role conflict in the area of education:

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[5] Getzels, Lipham, and Campbell, EDUCATIONAL ADMINISTRATION AS A SOCIAL PROCESS, p. 108.

[6] Getzels, "Administration as a Social Process," pp. 161-162.

[7] Talcott Parsons, THE SOCIAL SYSTEM (Glencoe: The Free Press, 1951); Talcott Parsons and Edward Shils (eds.), TOWARD A GENERAL THEORY OF ACTION, (Cambridge: Harvard University Press, 1951); Talcott Parsons, Robert Bales, and Edward Shils, WORKING PAPERS IN THE THEORY OF ACTION, (New York: The Free Press, 1953).

[8] Jacob W. Getzels, "A Psycho-Sociological Framework for the Study of Educational Administration," HARVARD EDUCATIONAL REVIEW, 22 (Fall, 1952), 235-246; Jacob W. Getzels and Herbert A. Thelen, "The Classroom Group as a Unique Social System," in N. B. Henry (ed.), THE DYNAMICS OF INSTRUCTIONAL GROUPS: SOCIO-PSYCHOLOGICAL ASPECTS OF TEACHING AND LEARNING, (Chicago: University of Chicago Press, 1960), pp. 53-82.

> (1) contradiction between the expectations of two or more roles which an individual is attempting to fulfill simultaneously, or "interrole conflict"; (2) contradiction among several reference groups, each defining the expectations for the same role, or "interreference-group conflict"; (3) contradiction within a single reference group defining a given role, or "intrareference-group conflict."[9]

Seeman studied the effects of "interreference-group conflict" in twenty-six randomly selected Ohio communities. He found that conflicting reference group expectations led to ambivalence (the subjective realization of conflict) among leaders with respect to (1) the status dimension (conflict between the success ideology and the equality ideology), (2) the authority dimension (conflict between the values of dependence and independence), (3) the institutional dimension (conflict between universalist and particularist criteria for social action), and (4) the means-ends dimension (conflict between emphasis on getting the job done and emphasis on the process of achievement). Seeman concluded that his research highlighted "the possibility of, and the need of moving toward, an analysis of the consequences, for person and institution, of the role conflict and ambivalence problem."[10]

One consequence of this problem concerns the effectiveness of role incumbents. Although the criterion for effectiveness typically has been "the observed behavior of the individual being rated," Getzels, Lipham, and Campbell suggested that the "standard may not be the behavior itself but the observed behavior relative to some criterion against which it is evaluated." Hence, effectiveness is "a measure of the concordance of the role behavior and the role expectations." It follows from this definition that (1) "the same behavior may be held effective and ineffective simultaneously because different persons or groups apply different expectations to the behavior" and that (2) "the same behavior may be held effective at one time and ineffective at another time by the same person, depending on the expectations he applies to the behavior."[11]

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[9] Getzels, Lipham, and Campbell, EDUCATIONAL ADMINISTRATION AS A SOCIAL PROCESS, p. 182.

[10] Melvin Seeman, "Role Conflict and Ambivalence in Leadership," AMERICAN SOCIOLOGICAL REVIEW, 18 (August, 1953), 380.

In this study, a derived measure of principal leadership effectiveness was obtained by determining the absolute differences between the perceptions of unit leaders and unit teachers with regard to the real and ideal leader behavior of IGE/MUS-E principals. Similarly, a derived measure of principal satisfaction was obtained by determining the absolute difference between the perceptions of principals with regard to their real and ideal leader behavior.

Leadership Theory

Two of the more important advances in the study of leadership were the development of the Leader Behavior Description Questionnaire by the Bureau of Business Research of Ohio State University[12] and the development of the path-goal theory of leadership by House.[13] The original Leader Behavior Description Questionnaire (LBDQ) consisted of nine dimensions, which Hemphill and Coons collapsed to three orthogonal factors: (1) maintenance of membership character, (2) objective attainment behavior, and (3) group interaction facilitation behavior.[14] Subsequent factor analysis by Halpin and Winer produced four orthogonal factors: (1) Consideration, (2) Initiating Structure, (3) Production Emphasis, and (4) Sensitivity (social awareness). The researchers dropped the third and fourth factors because Consideration and Initiating Structure accounted for 83.2 per cent of the common variance.[15]

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[11] Getzels, Lipham, and Campbell, EDUCATIONAL ADMINISTRATION AS A SOCIAL PROCESS, pp. 128-129.

[12] Ralph M. Stogdill and Alfred E. Coons (eds.), LEADER BEHAVIOR: ITS DESCRIPTION AND MEASUREMENT, (Columbus: Ohio State University Press, 1957).

> Initiating Structure refers to the leader's behavior in delineating the relationship between himself and the members of his group, and in endeavoring to establish well-defined patterns of organization, channels of communication, and ways of getting the job done. Consideration refers to behavior indicative of friendship, mutual trust, respect, and warmth in the relationship between the leader and the members of the group.[16]

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[13] Robert J. House and Gary Dessler, "The Path-Goal Theory of Leadership: Some Post Hoc and A Priori Tests." Paper presented at The Second Leadership Symposium: Contingency Approaches to Leadership, Southern Illinois University, Carbondale, 1973. (Mimeographed.) See also, Alan C. Filley and Robert J. House, MANAGERIAL PROCESSES AND ORGANIZATIONAL BEHAVIOR, (Glencoe: Scott, Foresman and Company, 1969).

[14] John K. Hemphill and Alfred E. Coons, "Development of the Leader Behavior Description Questionnaire," in Stogdill and Coons (eds.), LEADER BEHAVIOR, pp. 6-38.

[15] Andrew W. Halpin and J. Winer, "A Factorial Study of the Leader Behavior Description Questionnaire," in Stogdill and Coons (eds.), LEADER BEHAVIOR, pp. 39-51.

[16] Andrew W. Halpin, "The Leader Behavior and Leadership Ideology of Educational Administrators and Aircraft Commanders," HARVARD EDUCATIONAL REVIEW, 25 (Winter, 1955), 18.

Stogdill later retained Production Emphasis and added nine more dimensions to produce the Leader Behavior Description Questionnaire-Form XII (LBDQ-XII).[17] Since their development, both the LBDQ and the LBDQ-XII have been used extensively in research studies concerned with leader behavior.

Hemphill, in a study of the leadership and administration of twenty-two college departments in a midwestern university, documented the importance of the transactional style delineated by Moser. He found that:

> Departments that achieve a reputation for good administration are those departments led by chairmen who attend to both of the facets of leadership measured in this study, i.e., they concern themselves with (1) organizing departmental activities and initiating new ways of solving departmental problems, and at the same time with (2) developing warm considerate relationships with members of the department.[18]

Jacobs, in a study of relatively innovative and non-innovative public junior high schools in Michigan, reported that "the most productive principals . . . were rated high on both [Initiating Structure and Consideration], and especially high on Initiating Structure."[19] Likewise, Halpin noted that superintendents and their reference groups identified the most effective superintendents as those who scored high on both Initiating Structure and Consideration.[20] These findings are congruent with the conclusion of Halpin and Winer's analysis of the leader behavior and effectiveness of aircraft commanders:

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[17] Ralph M. Stogdill, MANUAL FOR THE LEADER BEHAVIOR DESCRIPTION QUESTIONNAIRE-FORM XII: AN EXPERIMENTAL REVISION, (Columbus: Ohio State University Press, 1963).

[18] John K. Hemphill, "Leadership Behavior Associated with the Administrative Reputation of College Departments," JOURNAL OF EDUCATIONAL PSYCHOLOGY, 46 (November, 1955), 394-395.

[19] John W. Jacobs, "Leader Behavior of the Secondary School Principal," BULLETIN OF THE NATIONAL ASSOCIATION OF SECONDARY SCHOOL PRINCIPALS, 49 (October, 1965), 16-17.

> In short, our findings suggest that to select a leader who is likely to satisfy both his crew and his superiors, we do best by choosing an aircraft commander who is above average on both leader behavior dimensions.[21]

Halpin's research also revealed that, while staff members and board members (taken as separate groups) indicated consensus in their descriptions of the superintendent's leader behavior, the former preferred superintendents whom they perceived as being highly considerate, whereas board members preferred those whom they perceived as possessing a high degree of initiative.[22] Randall and Watts, Guetzkow, and Halpin and Winer reported similar findings. Randall and Watts observed that "principals described by teachers as high in 'initiating structure' tended to be rated higher by supervisors of the principals, but principals high in 'consideration' tended to be rated lower."[23] Guetzkow found that authoritarian leaders were rejected by "relatively many followers and accepted by relatively many superiors," while non-authoritarian leaders were accepted by "relatively many followers and rejected by relatively many superiors."[24] Halpin and Winer reported that Initiating Structure correlated positively with superiors' ratings of the effectiveness of aircraft commanders but that Consideration related negatively to these ratings. Conversely, Initiating Structure and particularly Consideration correlated positively with the crew's ratings of the effectiveness of the commander.[25]

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[20] Andrew W. Halpin, THE LEADERSHIP BEHAVIOR OF SCHOOL SUPERINTENDENTS, (Columbus: Ohio State University Press, 1956), pp. 77-78.

[21] Halpin and Winer, "A Factorial Study of the Leader Behavior Description Questionnaire," in Stogdill and Coons (eds.), LEADER BEHAVIOR, p. 47.

[22] Halpin, LEADERSHIP BEHAVIOR OF SCHOOL SUPERINTENDENTS.

[23] Robert S. Randall and Charles B. Watts, "Leadership Behavior, Problem-Attach Behavior, and Effectiveness of High School Principals," JOURNAL OF EXPERIMENTAL EDUCATION, 35 (Summer, 1967), 6.

Recently, House identified three oblique factors from a pool of thirty-five leader behavior items: (1) instrumental leadership (IL), (2) supportive leadership (SL), and (3) participative leadership (PL). The IL and SL factors consist primarily of items taken from the Initiating Structure and Consideration subscales, respectively, of the LBDQ-XII. The IL factor differs from Initiating Structure in that it does not include items which reflect autocratic or punitive leader behavior and the SL factor differs from Consideration in that it does not include participative items. The PL factor consists of items developed by House and items taken from the Consideration subscale of the LBDQ-XII which reflect participative leadership. "The PL scale measures the degree to which the leader allows subordinates to influence his decisions by asking for suggestions and including subordinates in the decision making process."[26]

---

[24] Harold Guetzkow, GROUPS, LEADERSHIP, AND MEN, (New Brunswick: Carnegie Press, 1951), p. 171.

[25] Andrew W. Halpin, "How Leaders Behave," in Fred D. Carver and Thomas G. Sergiovanni (eds.), ORGANIZATIONS AND HUMAN BEHAVIOR: FOCUS ON SCHOOLS, (New York: McGraw-Hill, 1969), p. 289.

House's factors are similar to those Brown obtained from a factor analysis of the LBDQ-XII. Both sets of factors are analagous to the nomothetic, idiographic, and transactional leadership styles discussed by Getzels and Moser.

> Factor I—behavior that responds to the needs of the school as the apersonalized system with its own goals, themes, and institutional existence, and Factor II—behavior that responds to the idiosyncratic, personal, and professional needs of fellow human beings on staff—can be understood partly in terms of Getzels' nomothetic and idiographic dimensions of the school as a social system and Barnard's distinction between effective and efficient employee behavior.
>
> Although system and person factors are themselves orthogonal, the subscales load without exception on both factors but in just slightly different proportions. Thus may twelve concepts of leadership activity be assembled in an ascending or descending sequence from (1) those activities responding chiefly to system needs (Initiating Structure, Production Emphasis, Representation), through (2) those activities responding chiefly to the need for effective transaction between the institution and the person (Integration, Predictive Accuracy, Superior Orientation), to (3) those activities responding chiefly to idiosyncratic needs of staff (Tolerance of Freedom, Tolerance of Uncertainty, Consideration).[27]

Central to House's study of leader behavior is his path-goal theory of leadership, which was derived from the path-goal hypothesis proposed by Georgopoulos, et al.,[28] and from the expectancy theory of motivation.[29] House's theory consists of two basic propositions: (1) "one of the strategic functions of the leader is to enhance the psychological states of subordinates that result in motivation to perform or in satisfaction with the job," and (2) "the specific leader behavior that will accomplish the motivational function of leadership is determined by the situation in which the leader operates."[30] Thus, the basic function of the leader is a "supplemental one," that is:

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[26] House and Dessler, "Path-Goal Theory of Leadership," 22-23.

[27] Alan F. Brown, "Reactions to Leadership," EDUCATIONAL ADMINISTRATION QUARTERLY, 3 (Winter, 1967), 68-69.

[28] Basil S. Georgopoulos, Gerald M. Mahoney, and Nyle W. Jones, Jr., "A Path-Goal Approach to Productivity," JOURNAL OF APPLIED PSYCHOLOGY, 41 (December, 1951), 345-353.

> . . . the motivational functions of the leader consists of increasing personal pay-offs to subordinates for work-goal attainment, and making the path to these pay-offs easier to travel by clarifying it, reducing road blocks and pitfalls, and increasing the opportunities for personal satisfaction en route.[31]

House concurred with Halpin that variance in leader behavior is associated with situational variance.[32] Specifically, House delineated two classes of situational variables: "the characteristics of subordinates and the environmental pressures and demands the subordinates must cope with to accomplish work goals and satisfy their own needs." With respect to the characteristics of subordinates, the theory hypothesizes that (a) "leader behavior will be viewed as acceptable to subordinates to the extent that the subordinates see such behavior as either an immediate source of satisfaction, or as instrumental to future satisfaction," and (b) the effects of leader behavior are moderated by "the subordinates' perception of their own ability with respect to task demands."[33]

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[29] Victor H. Vroom, WORK AND MOTIVATION, (New York: John Wiley and Sons, 1964).

[30] House and Dessler, "Path-Goal Theory of Leadership," 3, 5.

[31] *Ibid.*, 4.

[32] John K. Hemphill, SITUATIONAL FACTORS IN LEADERSHIP, (Columbus: Ohio State University Press, 1949).

The second class of situational variables, which "consists of those factors that are not within the control of the subordinate but which are important to his need satisfaction or to his ability to perform effectively," is broken down into three environmental moderators: (a) the subordinates' task, (b) the formal authority system of the organization, and (c) the primary work group. With respect to the environment, the theory postulates that:

> 1. Where path-goal relationships are apparent because of the routine of the task, clear group norms, or objective system-fixed controls of the formal authority systems, attempts by the leader to clarify path-goal relationships will be redundant and will be seen by subordinates as unnecessarily close control.
>
> 2. The more dissatisfying the task the more the subordinates will resent behavior by the leader directed at increasing productivity or enforcing compliance to organizational rules and procedures.
>
> 3. Leader behavior will be motivational to the extent that it helps subordinates cope with environmental uncertainties, threat from others or sources of frustration.[34]

---

[33] House and Dessler, "Path-Goal Theory of Leadership," 5-6.

[34] Ibid., 7-9.

The utilization of these situational variables represents an important advance in the study of leader behavior. Korman observed:

> While a few [researchers] actively involved in this area have emphasized constantly that the effects of "Consideration" and "Initiating Structure" on performance would depend on various situational variables . . . in most cases the researchers have made little attempt to either conceptualize situational variables which might be relevant and/or measure them. Instead, the researchers have tended almost always to follow the two-variable design which consists simply of correlating the test variable with the criterion variable, with little appreciation of the possible situational variables which might be moderating these relationships. . . . What is needed, however, in future concurrent (and predictive) studies is not just recognition of this factor of "situational determinants" but, rather, a systematic conceptualization of situational variance as it might relate to leadership behavior and a research program designed to test derivations from such a conceptualization so that direction might be given to the field.[35]

House found that, although leaders who scored high on "Initiating Structure" generally were "rated highly by superiors" and had "higher producing work groups" than leaders who scored low on this variable, "the evidence with respect to the relationship between initiating structure and satisfaction of subordinates is very mixed."[36] He reported, for example, that "among high-level employees, initiating structure is positively related to satisfaction . . . performance . . . and perceptions of organizational effectiveness, but negatively related to role conflict and ambiguity." On the other hand, House noted that unskilled and semi-skilled workers frequently resented Initiating Structure and perceived it as "a source of dissatisfaction."[37] Furthermore, Fleishman and Harris found that employee grievances and turnover rates correlated positively with the amount of structure initiated by the foreman, whereas both indices correlated negatively with the amount of consideration shown by the foreman.[38] House's path-goal theory of leadership attempts to integrate such conflicting results under the previously cited set of general propositions.

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[35] Abraham K. Korman, "'Consideration,' 'Initiating Structure,' and Organizational Criteria--A Review," PERSONNEL PSYCHOLOGY, 19 (Winter, 1966), 355.

[36] Robert J. House, "A Path-Goal Theory of Leader Effectiveness," ADMINISTRATIVE SCIENCE QUARTERLY, 16 (September, 1971), 321.

The results of the Fleishman and Harris study, for example, can be explained in terms of House's environmental moderators. If it can be assumed that the tasks performed by unskilled and semiskilled workers are routine (and therefore dissatisfying), then it follows from the first environmental postulate that attempts by the foreman to initiate structure (i.e., attempts to clarify already apparent path-goal relationships) will be perceived by subordinates as "unnecessarily close control." Furthermore, it follows from the third postulate that considerate leader behavior will be motivational because it "helps subordinates cope with . . . sources of frustration." Hence, in this environment, job satisfaction (employee grievances and turnover rates may be viewed as proxy measures for job satisfaction) in part is contingent on leader behavior which maximizes Consideration and minimizes Initiating Structure. Conversely, "high-level employees" will respond positively to Initiating Structure because such behavior will clarify path-goal relationships which are not apparent. In addition, if it may be assumed that the tasks performed by these employees are non-routine (and hence satisfying), then it follows from the third environmental postulate that such behavior also will be motivational in that it "helps subordinates cope with environmental uncertainties [and/or] threat from others."

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[37] House, "Path-Goal Theory of Leader Effectiveness," 321-322.

[38] Edwin A. Fleishman and Edwin F. Harris, "Patterns of Leadership Behavior Related to Employee Grievances and Turnover," PERSONNEL PSYCHOLOGY, 15 (Spring, 1962), 43-56.

House provided substantial support for the theory by making post hoc interpretations of six studies and by analyzing two additional studies which are a priori tests of the theory.[39] Specifically, the path-goal theory of leadership has proven useful in reconciling some of the conflicting results of empirical studies concerned with leader Initiating Structure and subordinate performance, satisfaction, and motivation.[40]

As will become apparent in the next section of this chapter, two of House's environmental moderators, the subordinates' task and the formal authority system of the organization, roughly are analagous to the organizational concepts of routineness of technology and formalization. Since this study in part is concerned with the interaction of principal leader behavior and certain organizational-structural variables, the organizational concepts, not House's moderators, were utilized.

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[39] House and Dessler, "Path-Goal Theory of Leadership," 9-35.

[40] Robert J. House, "Leader Initiating Structure and Subordinate Performance, Satisfaction, and Motivation: A Review and A Theoretical Interpretation." (Mimeographed.)

Organizational Theory

Both social systems theory and House's path-goal theory of leadership view organizations from a social-psychological perspective. Although this approach has made important contributions to the understanding, among other things, of organizational effectiveness and efficiency, Hage and Aiken nevertheless maintained that it is inadequate. They argued that "collective properties are best explained by other collective properties" rather than psychological or social-psychological properties.[41] Hage's axiomatic theory views organizations from such a structural perspective.[42]

Central to the theory are seven two-variable propositions drawn from the writings of Weber, Barnard, and Thompson. The first three propositions summarize much of Weber's model of bureaucracy,[43] the second three are extracted from Barnard's discussion of the functions of status systems,[44] and the seventh is obtained from Thompson's work.[45] The propositions are based on eight organizational variables, four of which are inputs or means (complexity, centralization, formalization, and stratification), and four of which are outputs or ends (adaptiveness, production, efficiency, and job satisfaction). By assuming that these means and ends form a closed system of interrelated variables, Hage derived twenty-one corollaries (Appendix A). These corollaries, the seven propositions, and an eighth proposition, which sets limits on the first seven, complete the theory.

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[41] Jerald Hage and Michael Aiken, SOCIAL CHANGE IN COMPLEX ORGANIZATIONS, (New York: Random House, 1970), p. 123.

[42] Jerald Hage, "An Axiomatic Theory of Organizations," ADMINISTRATIVE SCIENCE QUARTERLY, 10 (December, 1965), 289-320.

[43] Max Weber, THE THEORY OF SOCIAL AND ECONOMIC ORGANIZATION, trans. by M. Henderson and Talcott Parsons (Glencoe: The Free Press, 1947), pp. 320-340; Hans Gerth and C. Wright Mills, FROM MAX WEBER: ESSAYS IN SOCIOLOGY, (New York: Oxford University Press, 1958), pp. 196-244.

[44] Chester I. Barnard, "Functions and Pathology of Status Systems in Formal Organizations," in William F. Whyte (ed.), INDUSTRY AND SOCIETY, (New York: McGraw-Hill, 1964), pp. 46-83.

The major theme running through the axiomatic theory is Parsons, Bales, and Shils' idea of functional strains,[46] or Blau and Scott's concept of organizational dilemma.[47] "This means that an increase in one variable results in a decrease in another variable, or that the maximization of one social mean results in the minimization of another."[48] Hage's axiomatic theory of organizations attempts to specify which variables are in opposition and why. The eight propositions are:

1. The higher the centralization, the higher the production.
2. The higher the formalization, the higher the efficiency.
3. The higher the centralization, the higher the formalization.
4. The higher the stratification, the lower the job satisfaction.

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[45] Victor A. Thompson, MODERN ORGANIZATION, (New York: Alfred A. Knopf, 1961), pp. 3-113.

[46] Parsons, Bales, and Shils, WORKING PAPERS, pp. 64, 88-90, 180-185.

[47] Peter M. Blau and W. Richard Scott, FORMAL ORGANIZATIONS, (San Francisco: Chandler, 1962).

[48] Hage, "Axiomatic Theory," 296.

5. The higher the stratification, the higher the production.
6. The higher the stratification, the lower the adaptiveness.
7. The higher the complexity, the lower the centralization.
8. Production imposes limits on complexity, centralization, formalization, stratification, adaptiveness, efficiency, and job satisfaction.[49]

In this study, structure was defined operationally in terms of three of Hage's input variables: (1) the degree of centralization of decision making, (2) the degree of formalization of work rules and regulations, and (3) the degree of stratification. The organizational mean of complexity was considered to be inappropriate for this study because there is little variability in the number of occupational specialities and the level (length) of training required for these specialities across IGE/MUS-Es.

Furthermore, Hage's output variables were not utilized in this study. Rather, the interrelationships of principal leader behavior, the above three structural variables, and I and R unit effectiveness were examined. The National Evaluation Committee of the Wisconsin Research and Development Center for Cognitive Learning reported that:

> There is a paucity of research which illuminates the interaction between organizational variables and the behaviors of school personnel. . . . This is a situation with which neither the Center nor NIE can remain content.[50]

This study in part delineated the interactions between the leader behavior of principals and the organizational means of centralization, formalization, and stratification.

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[49] Hage, "Axiomatic Theory," 297.

[50] National Evaluation Committee of the Wisconsin Research and Development Center for Cognitive Learning, Minutes of Meetings of November 19-22, 1972, p. 3. (Mimeographed.)

Centralization is conceived as the degree to which power is distributed in an organization. Operationally, it is defined as the proportion of jobs or occupations whose incumbents participate in decision making and the number of areas in which they participate. Hence, the lower the proportion of incumbents who participate in decision making and the fewer the decision areas involved, the greater the organization's centralization.[51]

Formalization is conceived as the degree of job codification in an organization and the latitude tolerated within the rules defining the job. Operationally, it is defined as the degree of standardization and codification of work procedures and the degree of latitude allowed in the performance of the work. Hence, the higher the proportion of codified jobs and the less the latitude allowed in the performance of the job, the greater the organization's formalization.[52]

Stratification is conceived as the differential distribution of rewards to the role incumbents of an organization. Operationally, it is defined as the number of formal authority levels in the organization and the degree to which these levels are perceived to be linked with salary and status. Hence, the greater the number of authority levels in an organization and the greater the difference in salary and status between these levels, the greater the organization's stratification.[53]

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[51] Hage, "Axiomatic Theory," 297.

[52] Ibid., 295. See also, Pugh, et al., "Dimensions of Organization Structure," ADMINISTRATIVE SCIENCE QUARTERLY, 13 (June, 1968), 75.

Centralization.— The results of several studies support Thompson's observation that, as the number of occupational specialties increases, there is an inevitable strain toward decentralization.[54] Hage and Aiken, in a study of social health and welfare organizations, found that a low degree of centralization (as reflected by a high degree of participation in decision making about the allocation of organizational resources and the determination of organizational policy) related strongly to a high degree of complexity.[55] Similarly, Blau, et al., reported that the division of labor in public personnel agencies "promotes centralization of authority only if the staff is not professional."[56] Blau replicated the conclusions of this study, which were based primarily on inferential conjecture, in a more refined study of state and local government departments of finance. Again, the more complex departments were more decentralized than the less complex departments.[57] Likewise, Meyer reported that decentralization of authority in finance departments was associated with the quality of personnel as measured by "the number of employees for whom a degree is desirable" and by "the number who actually have a degree."[58] Zald observed that decentralized correctional institutions also had more highly trained personnel than their centralized counterparts.[59] Janowitz reported that the increasingly technical nature (high degree of complexity) of modern warfare led to the decentralization of decision making.[60] Snead, in a study of Texas junior colleges, noted that the degree of centralization (ratio of manager to non-clerical personnel) related negatively to the degree of complexity (mean educational level of professional personnel).[61] And Pugh, et al., in their study of English work organizations, also found that centralization correlated negatively with complexity.[62]

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[53] Hage, "Axiomatic Theory," 295.

[54] Victor A. Thompson, "Bureaucracy and Innovation," ADMINISTRATIVE SCIENCE QUARTERLY, 10 (June, 1965), 17.

[55] Jerald Hage and Michael Aiken, "Relationship of Centralization to Other Structural Properties," ADMINISTRATIVE SCIENCE QUARTERLY, 12 (June, 1967), 72-92.

[56] Peter M. Blau, Wolf V. Heydebrand, and Robert E. Stauffer, "The Structure of Small Bureaucracies," AMERICAN SOCIOLOGICAL REVIEW, 31 (February, 1966), 179.

[57] Peter M. Blau, "The Hierarchy of Authority in Organizations," AMERICAN JOURNAL OF SOCIOLOGY, 73 (January, 1968), 453-467.

The results of four studies are congruent with Thompson's observations that the innovative organization "will allow that diversity of inputs needed for the creative generation of ideas," "should be sufficiently decentralized so that appropriate resource accumulation" will be possible, and "will be characterized by structural looseness generally, with less emphasis on narrow, nonduplicating, nonoverlapping definitions of duties and responsibilities."[63] Hage and Aiken found that innovative health and welfare agencies, or those which participated in several joint programs, tended to be more complex and to have somewhat more decentralized decision-making structures than the less innovative agencies.[64] In a subsequent study of the same agencies, Hage and Aiken reported that the rate of innovation or program change ("'. . . the generation, acceptance, and implementation of new ideas, processes, products, or services' for the first time within an organizational setting")[65] correlated positively with the degree of complexity, whereas it correlated negatively with the degrees of centralization and formalization (index of job codification).[66] Likewise, Cillié observed that decentralized schools in New York State adopted more new programs than did centralized schools.[67] And Hage, in a study of community hospitals' response to innovation, noted that the introduction of a new department of medical education led to the decentralization of decision making.[68]

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[58] Marshall W. Meyer, "Centralization and Decentralization of Authority in Departments of Finance," MUNICIPAL FINANCE, 40 (August, 1967), 40-46.

[59] Mayer N. Zald, "Organizational Control Structures in Five Correctional Institutions," AMERICAN JOURNAL OF SOCIOLOGY, 68 (November, 1962), 335-345.

[60] Morris Janowitz, "Changing Patterns of Organizational Authority," ADMINISTRATIVE SCIENCE QUARTERLY, 3 (March, 1959), 473-493.

[61] William E. Snead, "A Test of an Axiomatic Theory of Organizations in the Junior College Milieu" (unpublished doctoral dissertation, University of Texas, 1967).

[62] D. S. Pugh, et al., "Dimensions of Organization Structure," ADMINISTRATIVE SCIENCE QUARTERLY, 13 (June, 1968), 65-105.

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[63] Thompson, "Bureaucracy and Innovation," 11, 13, 17.

[64] Jerald Hage and Michael Aiken, "Organizational Interdependence and Intraorganizational Structure," AMERICAN SOCIOLOGICAL REVIEW, 33 (December, 1968), 912-930.

[65] Thompson, "Bureaucracy and Innovation," 2.

[66] Michael Aiken and Jerald Hage, "The Organic Organization and Innovation," SOCIOLOGY, 5 (January, 1971), 63-82. See also, Jerald Hage and Michael Aiken, "Program Change and Organizational Properties: A Comparative Analysis," AMERICAN JOURNAL OF SOCIOLOGY, 72 (March, 1967), 503-519; Hage and Aiken, SOCIAL CHANGE, pp. 57-60; Michael Aiken and Jerald Hage, THE RELATIONSHIP BETWEEN ORGANIZATIONAL FACTORS AND THE ACCEPTANCE OF NEW REHABILITATION PROGRAMS IN MENTAL RETARDATION (Washington, D.C.: Vocational Rehabilitation Administration, Department of Health, Education, and Welfare, 1968).

These findings also support Hage's hypotheses that (1) organic organizations are characterized by a high degree of complexity and low degrees of centralization, formalization, and stratification, whereas (2) mechanistic organizations are characterized by the reverse, and (3) organic organizations are more innovative than mechanistic organizations.[69] The third hypothesis was adopted from Burns and Stalker, whose study of Scottish electrical firms led them to posit that the organic model is more suited to change and therefore more conducive to change than the mechanistic model.[70]

The results of several recent studies, however, generally have not supported Hage's hypotheses concerning these models. Evan and Black observed that the degree of innovation (the number of proposals for innovation per manager in an organization) among several different types of business organizations was associated with both a high degree of professionalization of staff personnel and a high degree of formalization of rules.[71] Walter found that elementary schools characterized by a high degree of adaptiveness also evidenced a high degree of centralization and a low degree of complexity.[72] Halverson reported only one significantly positive relationship between the organizational means of complexity, centralization, and formalization and teachers' perceptions of the leader behavior of secondary school department chairmen--that between the degree of complexity (index of occupational specialties) and Initiating Structure.[73] Hetzel noted that, while there was a definite relationship between Hage's means and the number of new programs and services implemented in school district departments of curriculum and instruction, the relationships generally were not in the directions suggested by the organic model. Specifically, Hetzel found that formalization and adaptiveness correlated positively.[74] Groves, in a study of Texas colleges, reported a significantly positive relationship between the degrees of complexity and formalization.[75]

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[67] Francois S. Cillié, CENTRALIZATION OR DECENTRALIZATION?: A STUDY IN EDUCATIONAL ADOPTION, (New York: Teachers College, Columbia University, 1940), pp. 95-96.

[68] Jerald Hage, "Organizational Response to Innovation: A Case Study of Community Hospitals" (unpublished doctoral dissertation, Columbia University, 1963).

[69] Jerald Hage, "An Axiomatic Theory of Organizations," in Carver and Sergiovanni (eds.), ORGANIZATIONS AND HUMAN BEHAVIOR, p. 99. See also, Thomas G. Sergiovanni and Robert J. Starratt, EMERGING PATTERNS OF SUPERVISION: HUMAN PERSPECTIVES, (New York: McGraw-Hill, 1971), pp. 61-66.

[70] Tom Burns and G. M. Stalker, THE MANAGEMENT OF INNOVATION, (London: Tavistock Publications, 1961).

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[71] William M. Evan and Guy Black, "Innovation in Business Organizations: Some Factors Associated with Success or Failure of Staff Proposals," JOURNAL OF BUSINESS, 40 (October, 1967), 519-530.

[72] James E. Walter, "The Relationship of Organizational Structure to Adaptiveness in Elementary Schools" (unpublished doctoral dissertation, University of Wisconsin-Madison, 1973).

[73] William L. Halverson, "Relationship Between Organizational Structure and the Leader Behavior of Department Heads in Secondary Schools" (unpublished doctoral dissertation, University of Wisconsin, 1972).

[74] Robert W. Hetzel, "The Relationship Between Organizational Structure and Organizational Adaptability in Departments of Curriculum and Instruction" (unpublished doctoral dissertation, University of Wisconsin, 1971).

[75] Cecil L. Groves, "The Relationship Between Centralization, Formalization, and Complexity in Two Populations" (unpublished doctoral dissertation, University of Texas, 1970).

And Summers, in a study of college and university divisions of student personnel services, noted that all four input variables correlated positively with adaptability. Summers concluded that "a reappraisal of the hypothesized relationships of the axiomatic theory of organizations is necessary in future research conducted in units of public educational institutions."[76]

The findings of several studies support Hage's proposition that centralization relates positively to formalization. Hage and Aiken, in the preceding study of social welfare and health agencies, observed that a low degree of centralization correlated weakly with a low degree of formalization (indices of job codification and rule observation).[77] Hall, on the other hand, noted a strong relationship between hierarchy of authority and these measures of formalization.[78] A subsequent study by Hall revealed the same relationship.[79] Blau reported that public personnel agencies with highly formalized personnel procedures (index of job codification) and rigid conformity to these procedures (index of rule observation) had decentralized authority structures. These findings nevertheless are congruent with the results of the above studies in that the agencies utilized merit-based personnel procedures to ensure the presence of qualified employees at the decentralized level.[80] Pugh, et al., also found support for Hage's proposition that centralization correlates positively with formalization.[81]

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[76] Stephen H. Summers, "Relationship of Bureaucratic Structural Dimensions to Organizational Adaptability and Job Satisfaction in College and University Divisions of Student Personnel Services" (unpublished doctoral dissertation, University of Wisconsin-Madison, 1973), p. 96.

[77] Hage and Aiken, "Relationship of Centralization," 87.

[78] Richard H. Hall, "The Concept of Bureaucracy: An Empirical Assessment," AMERICAN JOURNAL OF SOCIOLOGY, 69 (July, 1963), 32-40.

[79] Richard H. Hall, "Some Organizational Considerations in the Professional-Organizational Relationship," ADMINISTRATIVE SCIENCE QUARTERLY, 12 (December, 1967), 461-478.

Hickson's contingency theory of intraorganizational power, which hypothesizes that organizations have a power distribution with its sources in the division of labor, shifted the focus from the centralized concept of power to the subunit as the unit of analysis. The power of a subunit is perceived as contingent on (1) the degree to which it copes with uncertainty for other subunits and (2) the extent to which its coping activities can be performed by another subunit (substitutability).[82] Child's concept of the dominant coalition emphasizes political action as the key consideration in the establishment of structural forms, the manipulation of environmental features, and the choice of relevant performance standards.[83] Thompson proposed that "the more numerous the areas in which the organization must rely on the judgmental decision strategy, the larger the dominant coalition." He also proposed that "the more heterogeneous the task environment, the larger the number of task environment specialists in the dominant coalition."[84]

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[80] Peter M. Blau, "Decentralization in Bureaucracies," in Mayer N. Zald (ed.), POWER IN ORGANIZATIONS, (Nashville: Vanderbilt University Press, 1970), p. 160.

[81] Pugh, et al., "Dimensions of Organization Structure."

[82] D. J. Hickson, et al., "A Strategic Contingencies' Theory of Intraorganizational Power," ADMINISTRATIVE SCIENCE QUARTERLY, 16 (June, 1971), 216-229.

[83] John Child, "Organization Structure, Environment, and Performance: The Role of Strategic Choice," SOCIOLOGY, 7 (1972), 1-22. See also, Richard M. Cyert and James G. March, A BEHAVIORAL THEORY OF THE FIRM, (Englewood Cliffs: Prentice-Hall, 1963).

Formalization.-- Several bases have been promulgated for the comparative analysis of organizations. Among them are the social function scheme of Parsons,[85] the "who benefits" approach of Blau and Scott,[86] the compliance structure of Etzioni,[87] the empirically derived taxonomies of Haas, Hall, and Johnson[88] and Pugh, et al.,[89] and the technology rationale of Perrow.[90] Hage and Aiken explored the latter approach in a study of the linkage of routineness of technology (the degree to which role incumbents have uniform work activities) to different aspects of organizational structure and goals in social health and welfare organizations. They found that decentralized agencies primarily engaged in non-routine work were characterized by high degrees of complexity and adaptability and a low degree of formalization. The measures of formalization significantly associated with routine technology in this study were (1) presence of a rules manual, (2) presence of job descriptions, and (3) the degree of specificity of job descriptions. Although the relationships were in the predicted direction, neither the degree of job codification nor the degree of rule observation correlated significantly with routineness of technology.[91] Price cautioned that "formalization should not be equated with the use of written norms," since the primary concern is "the degree to which the norms are explicit," and "the norms of an organization . . . can be very explicit without ever being written."[92] Thus, it could be argued that Hage and Aiken's data merely suggest a positive relationship between routineness of technology and formalization. Hall, on the other hand, maintained that "as a general rule, organizations that are more formalized on paper are more formalized in practice." He recommended the use of both Hage's subjective measures and Pugh's objective measures (official records and information from key informants) as indices of the degree of formalization.[93] Furthermore, Hall, in a study of five profit-making and five governmental organizations, found support for the relationship delineated by Hage and Aiken. He noted that organizational divisions which specialized in non-routine tasks were significantly less bureaucratic in terms of the hierarchy of authority and presence of external procedural specifications than those departments which specialized in more uniform tasks.[94] Thompson proposed that when the task environment is dynamic, organizations will be "less concerned with the application of rules than with the planning of responses to environmental changes," and they also "will be *decentralized*." Conversely, he proposed that "the organizational component facing a stable task environment will rely on rules to achieve its adaptation to that environment."[95] Bell defined organizations which possess flexible structures (e.g., decentralized organizations) as "those institutions in which the majority of tasks are not governed by a rigid, clearly specified authority structure."[96] Groves, in the previously cited study of Texas colleges, found that a high degree of complexity co-occurred with a low degree of formalization. Furthermore, when he empirically segregated the colleges into a centralized group and a decentralized group, the latter group evidenced a lesser degree of formalization and a greater degree of complexity than the former.[97] Haas and Collen, in a study of administrative practices in the teaching departments of a large midwestern university, reported that variation in the degree of formalization in hiring procedures, evaluation of performers, and handling of unsatisfactory faculty members related most significantly to the frequency of decision making.[98]

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[84] Thompson, ORGANIZATIONS IN ACTION, p. 136.

[85] Talcott Parsons, "Suggestions for a Sociological Approach to the Theory of Organizations-I," ADMINISTRATIVE SCIENCE QUARTERLY, 1 (1956), 63-85; Talcott Parsons, "Suggestions for a Sociological Approach to the Theory of Organizations-II," ADMINISTRATIVE SCIENCE QUARTERLY, 1 (1956), 225-239.

[86] Blau and Scott, FORMAL ORGANIZATIONS, pp. 42-45.

[87] Amitai Etzioni, A COMPARATIVE ANALYSIS OF COMPLEX ORGANIZATIONS, (New York: The Free Press, 1961).

[88] Eugene Haas, Richard H. Hall, and Norman J. Johnson, "Toward an Empirically Derived Taxonomy of Organizations," in Raymond V. Bowers (ed.), STUDIES ON BEHAVIOR IN ORGANIZATIONS, (Athens: University of Georgia Press, 1966), pp. 157-180. See also, Richard H. Hall, ORGANIZATIONS: STRUCTURE AND PROCESS, (Englewood Cliffs: Prentice-Hall, 1972), pp. 51-61.

[89] D. S. Pugh, et al., "A Conceptual Scheme for Organization Analysis," ADMINISTRATIVE SCIENCE QUARTERLY, 8 (December, 1963), 289-315. See also, D. S. Pugh, "The Context of Organization Structure," ADMINISTRATIVE SCIENCE QUARTERLY, 14 (March, 1969), 91-114; J. H. Inkson, D. S. Pugh, and D. J. Hickson, "Organization Context and Structure: An Abbreviated Replication," ADMINISTRATIVE SCIENCE QUARTERLY, 15 (September, 1970), 318-329; C. R. Hinings and G. L. Lee, "Dimensions of Organization Structure and Their Context: A Replication," SOCIOLOGY, 5 (January, 1971), 83-98; D. S. Pugh, D. J. Hickson, and C. R. Hinings, "An Empirical Taxonomy of Structures of Work Organizations," ADMINISTRATIVE SCIENCE QUARTERLY, 14 (March, 1969), 115-126.

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[90] Charles Perrow, "A Framework for the Comparative Analysis of Organizations," AMERICAN SOCIOLOGICAL REVIEW, 32 (April, 1967), 194-208. See also, Charles Perrow, ORGANIZATIONAL ANALYSIS: A SOCIOLOGICAL VIEW, (London: Tavistock Publications, 1970); William A. Rushing, "Hardness of Materials as Related to Division of Labor in Manufacturing Industries," ADMINISTRATIVE SCIENCE QUARTERLY, 13 (September, 1968), 229-245; Eugene Litwak, "Models of Bureaucracy Which Permit Conflict," AMERICAN JOURNAL OF SOCIOLOGY, 67 (September, 1961), 177-184.

[91] Jerald Hage and Michael Aiken, "Routine Technology, Social Structure, and Organization Goals," ADMINISTRATIVE SCIENCE QUARTERLY, 14 (September, 1969), 366-376.

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[92] James L. Price, HANDBOOK OF ORGANIZATIONAL MEASUREMENT, (Lexington, Mass.: D. C. Heath and Company, 1972), p. 107. See also, pp. 150-155.

[93] Hall, ORGANIZATIONS, p. 176.

[94] Richard H. Hall, "Intraorganizational Structural Variation: Application of the Bureaucratic Model," ADMINISTRATIVE SCIENCE QUARTERLY, 7 (December, 1962), 295-308.

Palumbo explored the question of whether or not the single continuum of role specificity in local public-health departments underlay the organizational variables of professionalism, centralization, formalization, innovation, and others.[99] Factor analytic techniques revealed that, contrary to the prediction of Hickson,[100] these concepts could not be reduced to one underlying continuum. Rather, Palumbo found that departments with highly specialized roles tended to be more formalized, centralized, and specialized; evidenced less participatory styles of management, less professionalism, and lower morale; and were characterized by low productivity and less innovation. Furthermore, when subgroups were taken as the units of analysis, contradictory findings emerged. For nurses, centralization related positively to formalization and negatively to participatory management styles and morale, whereas for sanitarians, centralization, formalization, and specialization were intercorrelated highly but related positively to management styles and morale. Palumbo interpreted these findings as supporting Perrow's thesis that technology is related to organizational structure. Specifically, he suggested that these differences may be explained partly by the more routinized nature of the work performed by sanitarians (e.g., inspection of eating and drinking places, etc.). He also noted that the educational level of sanitarians was lower than that for nurses.[101] Hickson, Pugh, and Pheysey, on the other hand, found that the "'technological imperative'" hypothesis (specifically, that dealing with operations technology) generally was not supported in successive tests.[102]

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[95] James D. Thompson, ORGANIZATIONS IN ACTION, (New York: McGraw-Hill, 1967), pp. 71, 73.

[96] Gerald D. Bell, "Formality Versus Flexibility in Complex Organizations," in Carver and Sergiovanni, ORGANIZATIONS AND HUMAN BEHAVIOR, p. 77.

[97] Groves, "Relationship Between Centralization, Formalization, and Complexity."

[98] Eugene Haas and Linda Collen, "Administrative Practices in University Departments," ADMINISTRATIVE SCIENCE QUARTERLY, 8 (June, 1963), 44-60.

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[99] Dennis J. Palumbo, "Power and Role Specificity in Organization Theory," PUBLIC ADMINISTRATION REVIEW, 29 (May-June, 1969), 237-248.

[100] D. J. Hickson, "A Convergence in Organization Theory," ADMINISTRATIVE SCIENCE QUARTERLY, 14 (September, 1966), 224-238.

[101] Palumbo, "Power and Role Specificity," 242, 243.

Blau and Scott observed that routinization of tasks was associated not only with high degrees of centralization, production, and productivity (efficiency), but also with a low degree of job satisfaction and a high level of turnover.[103] Aiken and Hage found that both alienation from work and alienation from expressive relations were more prominent in social health and welfare agencies characterized by high degrees of centralization and formalization than in those agencies characterized by the reverse.[104] Likewise, Fraser observed that elementary and secondary school teachers were least satisfied and committed in highly centralized school systems.[105] The results of the Aiken and Hage study are consistent with Hall's hypothesis that, for professionals, "the greater the degree of formalization in the organization, the greater the likelihood of alienation from work."[106] Similarly, Blau stated that organizational specialists "are more likely to resent having their discretion limited by managerial directives than employees whose lesser skills make them welcome some guidance."[107]

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[102] D. J. Hickson, D. S. Pugh, and D. C. Pheysey, "Operations Technology and Organization Structure: An Empirical Reappraisal," ADMINISTRATIVE SCIENCE QUARTERLY, 14 (September, 1969), 378-397.

[103] Blau and Scott, FORMAL ORGANIZATIONS, p. 251.

[104] Michael Aiken and Jerald Hage, "Organizational Alienation: A Comparative Analysis," AMERICAN SOCIOLOGICAL REVIEW, 31 (August, 1966), 497-507.

[105] Graeme S. Fraser, "Organizational Properties and Teacher Reactions" (unpublished doctoral dissertation, University of Missouri, 1967).

[106] Hall, ORGANIZATIONS, p. 187.

Stratification.-- Barnard observed that, while status systems are "essential to coherence, coordination, and esprit de corps," they also can generate "disorganizing forces." He cited several pathological aspects of status systems--that in time they tend to (1) distort the evaluation of individuals, (2) distort the system of distributive justice, (3) exaggerate administration to the detriment of leadership and morale, and (4) limit the adaptability of an organization.[108]

Hage noted that highly stratified hospitals scored low on measures of adaptiveness.[109] Seeman and Evans found that the degree of stratification on nursing wards related negatively to communication to and about the patient, quality of teaching, reputation for a high quality of medical performance, and use of consultation, whereas it related positively to the frequency of medication errors and frequency of resignation and length of service for nurses.[110] Herrick reported a significantly negative relationship between the degree of stratification and "teacher motivation related to social relationships, involvement in decision-making, and overall . . . teacher motivation" in IGE/MUS-Es. He also found a significantly negative correlation between this input variable and "teacher motivation related to social relationships and overall . . . teacher motivation" in traditional elementary schools.[111] Hage and Aiken reported that centralized social health and welfare organizations were characterized by a high degree of stratification.[112] Likewise, Udy found that, in non-industrial societies, bureaucracies (production organizations having three or more levels of authority) were more likely than associations to distribute rewards to members and, further, that the quantity of the reward tended to vary according to organizational office in bureaucracies but not in associations.[113] Berkowitz and Bennis, in a study of hospital outpatient departments, reported that respondents' self-initiation of interaction and frequency of contact related negatively to the status of the other party.[114] Shepherd and

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[107] Blau, "Hierarchy of Authority," 458. See also, Victor A. Thompson, "Hierarchy, Specialization, and Organizational Conflict," ADMINISTRATIVE SCIENCE QUARTERLY, 5 (1961), 492.

[108] Chester I. Barnard, "Functions and Pathology of Status Systems in Formal Organizations," in Carver and Sergiovanni (eds.), ORGANIZATIONS AND HUMAN BEHAVIOR, pp. 52-57.

[109] Hage, "Organizational Response to Innovation."

[110] Melvin Seeman and John W. Evans, "Stratification and Hospital Care: I. The Performance of the Medical Interne," AMERICAN SOCIOLOGICAL REVIEW, 26 (February, 1961), 67-80; Melvin Seeman and John W. Evans, "Stratification and Hospital Care: II. The Objective Criteria of Performance," AMERICAN SOCIOLOGICAL REVIEW, 26 (April, 1961), 193-204

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[111] H. Scott Herrick, "The Relationship of Organizational Structure to Teacher Motivation in Multiunit and Non-Multiunit Elementary Schools" (unpublished doctoral dissertation, University of Wisconsin-Madison, 1974), p. 88.

[112] Hage and Aiken, "Routine Technology."

[113] Stanley Udy, Jr., ORGANIZATION OF WORK, (New Haven: Toplinger Press, 1959), p. 39.

[114] Normal H. Berkowitz and Warren G. Bennis, "Interaction Patterns in Formal Service Oriented Organizations," ADMINISTRATIVE SCIENCE QUARTERLY, 6 (June, 1961), 25-50.

Brown found that stratification adversely affected the rates of interaction both within and outside of a naval research and development laboratory.[115] Carzo and Yanousas noted that, in order to protect themselves, subordinates reported only favorable information to their superiors.[116] Likewise, Burns and Stalker found that preoccupation with status led to avoidance tactics and the withholding of information from superiors.[117] Thompson stated that "the strategic considerations surrounding hierarchical competition and the need to protect the legitimacy of the positions counsel caution in the distribution of information both to subordinates and to others."[118] Blau and Scott concluded that status differences tended to reduce criticism of the ideas of role incumbents superior in power and prestige.[119] Thompson maintained that the idea man in a formally structured group tends to be suppressed because he "endangers the established distribution of power and status" and because he "is a competitive threat to his peers." He further stated that the lack of operational performance standards and the lack of opportunities in other organizations causes great anxiety in incumbents of high status positions which manifests itself in a "neurotic conformism to the wishes of the boss."[120] Blau and Meyer reflect the general view that status rigidities, often interpreted as the conversion of a required ranking system into an end in itself, are dysfunctional.[121] McEwan reported that the differential orientations of civilian and military employees of a military medical center toward status (the former perceived status in terms of professional competency, whereas the latter viewed it in terms of rank) resulted in both conflict and inefficiency.[122] And Dalton reported that relations among members of management in industrial bureaucracies:

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[115] Clovis Shepherd and Paula Brown, "Status, Prestige, and Esteem in a Research Organization," ADMINISTRATIVE SCIENCE QUARTERLY, 1 (1956), 208-224.

[116] Rocco Carzo, Jr., and John N. Yanousas, "Effects of Flat and Tall Organization Structure," ADMINISTRATIVE SCIENCE QUARTERLY, 14 (June, 1969), 178-191.

[117] Burns and Stalker, MANAGEMENT OF INNOVATION, pp. 148-154.

[118] Victor A. Thompson, "Hierarchy, Specialization, and Organizational Conflict," ADMINISTRATIVE SCIENCE QUARTERLY, 5 (1961), 507.

[119] Blau and Scott, FORMAL ORGANIZATIONS, pp. 122-125.

> . . . could be viewed as a general conflict system caused and perpetuated chiefly by (1) power struggles . . . from competition between departments . . . ; (2) drives . . . to increase . . . status; (3) conflict between union and management; and (4) the staff-line friction.[123]

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[120] Thompson, "Hierarchy, Specialization, and Organizational Conflict," 495, 504-505.

[121] Peter M. Blau and Marshall W. Meyer, BUREAUCRACY IN MODERN SOCIETY, (New York: Random House, 1971), p. 55.

[122] William F. McEwan, "Position Conflict and Professional Orientation in a Research Organization," ADMINISTRATIVE SCIENCE QUARTERLY, 1 (1956), 208-224.

[123] Melville Dalton, "Conflicts Between Line and Staff Managerial Officers," AMERICAN SOCIOLOGICAL REVIEW, 15 (1950), 342-351.

I and R Unit Effectiveness

Since 1965, the Wisconsin Research and Development Center for Cognitive Learning and cooperating educational agencies have been involved in the development, implementation, and refinement of a system of individually guided education (IGE) for elementary schools. Klausmeier, et al., defined IGE as:

> . . . a comprehensive system of education and instruction designed to produce higher educational achievements through providing well for differences among students in rate of learning, learning style, and other characteristics.[124]

The IGE system consists of seven components (Appendix B). One of these components is the multiunit elementary school (MUS-E), which:

> . . . may be thought of as an invention of organizational arrangements that have emerged since 1965 from a synthesis of theory and practice regarding instructional programing for individual students, horizontal and vertical organization for instruction, role differentiation, shared decision making by groups, and administrative and instructional accountability.[125]

The MUS-E was developed because of difficulties encountered when attempts were made to implement IGE in traditional, age-graded elementary schools.[126] Figure 2 depicts the prototypic organization of a MUS-E of 600 students. The organizational hierarchy of the school

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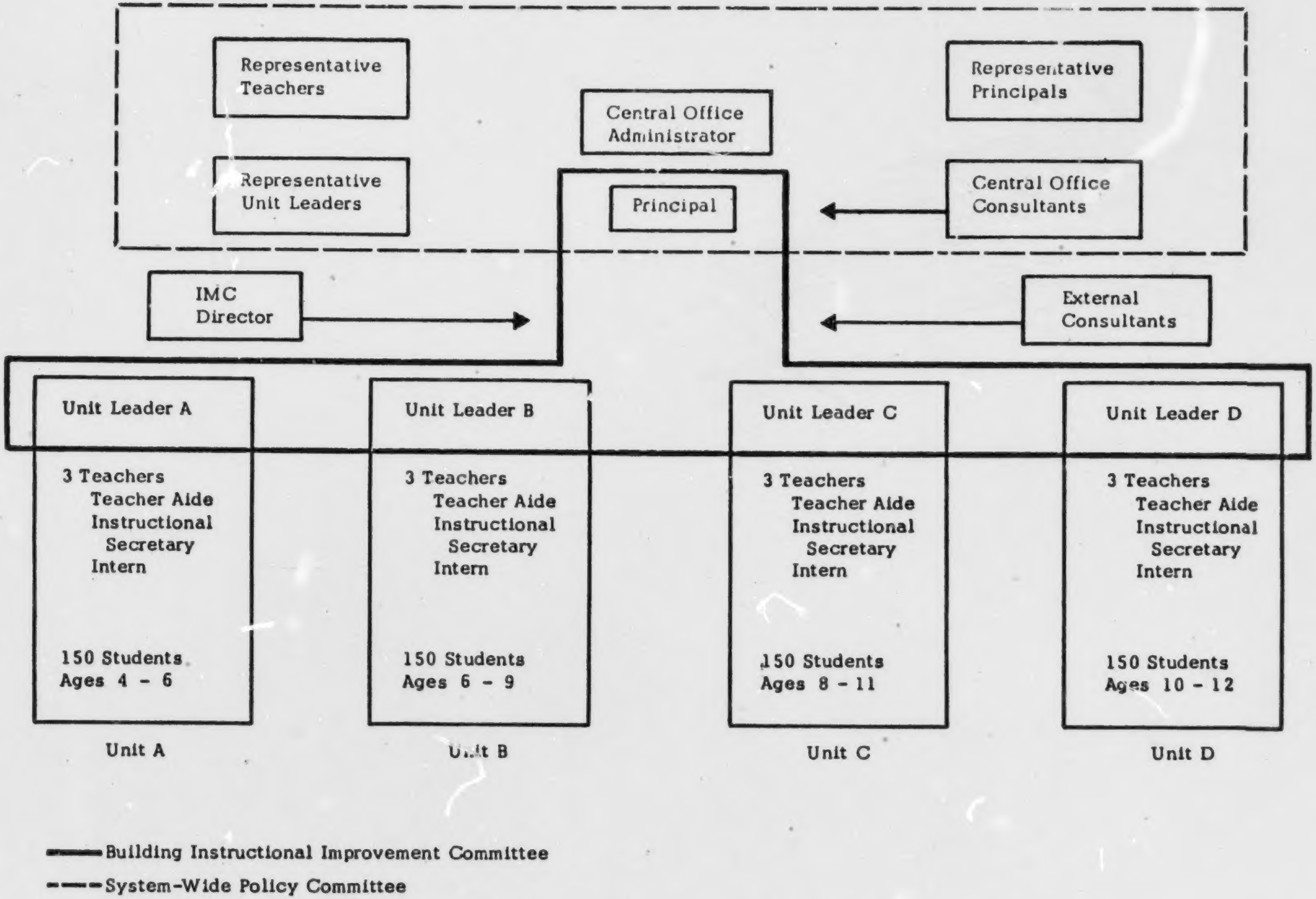
[124] Herbert J. Klausmeier, et al., INDIVIDUALLY GUIDED EDUCATION AND THE MULTIUNIT ELEMENTARY SCHOOL: GUIDELINES FOR IMPLEMENTATION, (Madison: Wisconsin Research and Development Center for Cognitive Learning, 1971), p. 17.

[125] Ibid., p. 20.

[126] Ibid., p. 4.

Figure 2

ORGANIZATIONAL CHART OF A MULTIUNIT SCHOOL OF 600 STUDENTS



Source: Klausmeier, et al., INDIVIDUALLY GUIDED EDUCATION AND THE MULTIUNIT ELEMENTARY SCHOOL: GUIDELINES FOR IMPLEMENTATION, p. 21.

consists of interrelated decision-making groups at three distinct levels of operation: (1) the Instruction and Research (I and R) unit at the classroom level, (2) the Instructional Improvement Committee (IIC) at the building level, and (3) the Systemwide Policy Committee (SPC) at the district level.

The basic function of the I and R unit is to plan, implement, and evaluate the instructional programs for children assigned to the unit. In addition, each unit should engage in a continuous inservice staff development program, plan and conduct research related to instruction, and be involved in preservice education.[127] The Wisconsin Research and Development Center developed specific performance objectives for I and R units in the areas of instructional program, organizational operations, staff development, and school-community relations.[128] Klausmeier, et al., emphasized:

> It is the Center's expectation that the school adopting the IGE/MUS-E program . . . will achieve its goal for the learner as a direct result of utilizing all or most of the practices and procedures contained in this set of objectives.[129]

The MUS-E differs from some differentiated staffing programs, which create a complex hierarchy necessitating several new personnel roles, in that it establishes only one new position, the unit leader. The unit leader has three major responsibilities: he/she is (1) a member of the IIC, (2) a leader of an I and R unit, and (3) a teacher. As a member of the IIC, the unit leader shares responsibility with the building principal for making decisions with regard to the planning and coordination of schoolwide instructional activities. Correspondingly, "one of the primary responsibilities of the Multiunit principal is the establishment and maintenance of an effective IIC to facilitate school-wide decision making."[130] The theoretical justification for this and other shared modes of operation within the MUS-E is predicated on two fundamental concepts of the MUS-E pattern:

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[127] Klausmeier, et al., INDIVIDUALLY GUIDED EDUCATION AND THE MULTIUNIT ELEMENTARY SCHOOL, pp. 20-22.

[128] Ibid., pp. 91-126.

[129] Ibid., p. 91.

> 1. Group interaction can produce a total effect greater than the sum of its parts.
>
> 2. A hierarchy of decision-making bodies, i.e., the Unit staff and the IIC, . . . places decisions in the hands of those most able to make the decisions and those most responsible for implementing those decisions.[131]

Despite the development of the prototypic organizational model and the set of performance objectives to guide principals, unit leaders, and unit teachers, research has shown that considerable variation exists among I and R units with regard to the extent to which these units achieve the Center's specified performance objectives. During the 1967-68 school year, Pellegrin conducted a longitudinal study of a control school and an IGE/MUS-E in its first year of implementation in each of three Wisconsin communities. He found "considerable variation in structure, policies, and practices" among the MUS-Es and also noted variation among I and R units in "interdependence relationships," or "those relationships between individuals that affect their ability to get their jobs done." Specifically, Pellegrin noted that "interdependence relationships" were "entirely intraunit as far as the relationships of teachers to one another are concerned."[132] The Wisconsin Research and Development Center, in its 1970-71 report of the development and evaluation of seventeen Wisconsin MUS-Es, observed "substantial variability among [I and R] units" with regard to the degree to which they met the Center's performance objectives.[133] Likewise, Ironside's 1971-72 process evaluation of the nationwide installation of IGE revealed considerable variation among units regarding the extent to which they met performance objectives concerned with instructional procedures, inservice education, and meetings. Ironside stated that the frequency of these variations "defines a pervasive lack of uniformity in the way unit operations were conducted within as well as across MUSE/IGE schools."[134]

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[130] Joan Beugen, Ira Kerns, and Norman Graper, INDIVIDUALLY GUIDED EDUCATION: THE PRINCIPAL'S HANDBOOK, (Dayton: Institute for Development of Educational Activities, 1971), p. 31.

[131] *Ibid*., p. 13.

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[132] Roland J. Pellegrin, SOME ORGANIZATIONAL CHARACTERISTICS OF MULTIUNIT SCHOOLS, Working Paper No. 22, (Madison: University of Wisconsin Research and Development Center for Cognitive Learning, 1969), pp. 3, 4.

[133] Herbert J. Klausmeier, Mary R. Quilling, and Juanita S. Sorenson, THE DEVELOPMENT AND EVALUATION OF THE MULTIUNIT ELEMENTARY SCHOOL, 1966-70, Technical Report No. 158, (Madison: Wisconsin Research and Development Center for Cognitive Learning, 1971), p. 9.

[134] Roderick A. Ironside, THE 1971-72 NATIONWIDE INSTALLATION OF THE MULTIUNIT/IGE MODEL FOR ELEMENTARY SCHOOLS: A PROCESS EVALUATION. A study conducted under contract with the Office of Program Planning and Evaluation, U. S. Office of Education, Department of Health, Education, and Welfare, OE Contract Number 0-71-3705, (Durham: Educational Testing Service, 1972), Vol. I, pp. 129-131.

These three studies constitute the only existing empirical evidence of the operational characteristics of I and R units. Furthermore, although the observations reported in these studies raise questions concerning the effectiveness of the I and R units, no systematic attempt has been made to determine empirically the factors related significantly to unit effectiveness. The research and literature discussed in the preceding sections of this chapter suggest that the leader behavior of principals and the organizational structure of the IGE/MUS-Es may influence I and R unit effectiveness. If the former variables were shown to be related directly to the effectiveness of the I and R units, then it may be assumed that unit effectiveness can be improved. Such an assumption occasioned the conduct of this study.

Statement of the Problem

This study was designed to investigate the interrelationships between the leader behavior of IGE/MUS-E principals, the organizational structure of the IGE/MUS-Es as measured by their degrees of centralization, formalization, and stratification, and the effectiveness of the I and R units. The primary purpose of the study was to determine which of the independent variables--principal leader behavior and the organizational-structural dimensions--related significantly to the dependent variable, I and R unit effectiveness. The specific problems addressed by the study were first, to determine the relationship between principal leader behavior and I and R unit effectiveness; second, to determine the relationship between principal leader behavior and the organizational-structural dimensions; and third, to determine the relationship between the organizational-structural dimensions and I and R unit effectiveness.

To achieve the purpose of this study, the following null hypotheses were tested:

1. There is no relationship between perceptions of principals with regard to the discrepancy between their real and ideal leader behavior and their perceptions of the effectiveness of the I and R units.

2. There is no relationship between perceptions of unit leaders with regard to the discrepancy between the real and ideal leader behavior of principals and their perceptions of the effectiveness of the I and R units.

3. There is no relationship between perceptions of unit teachers with regard to the discrepancy between the real and ideal leader behavior of principals and their perceptions of the effectiveness of the I and R units.

4. There is no relationship between perceptions of principals with regard to the discrepancy between their real and ideal leader behavior and their perceptions of the degrees of centralization, formalization, and stratification.

5. There is no relationship between perceptions of unit leaders with regard to the discrepancy between the real and ideal leader behavior of principals and their perceptions of the degrees of centralization, formalization, and stratification.

6. There is no relationship between perceptions of unit teachers with regard to the discrepancy between the real and ideal leader behavior of principals and their perceptions of the degrees of centralization, formalization, and stratification.

7. There is no relationship between perceptions of principals with regard to the degrees of centrali-

zation, formalization, and stratification and their perceptions of the effectiveness of the I and R units.

8. There is no relationship between perceptions of unit leaders with regard to the degrees of centralization, formalization, and stratification and their perceptions of the effectiveness of the I and R units.

9. There is no relationship between perceptions of unit teachers with regard to the degrees of centralization, formalization, and stratification and their perceptions of the effectiveness of the I and R units.

10. There is no relationship between perceptions of principals with regard to the discrepancy between their real and ideal leader behavior, the degrees of centralization, formalization, and stratification, and the effectiveness of the I and R units.

11. There is no relationship between perceptions of unit leaders with regard to the discrepancy between the real and ideal leader behavior of principals, the degrees of centralization, formalization, and stratification, and the effectiveness of the I and R units.

12. There is no relationship between perceptions of unit teachers with regard to the discrepancy between the real and ideal leader behavior of principals, the degrees of centralization, formalization, and stratification, and the effectiveness of the I and R units.

In addition, answers to the following ancillary questions were obtained:

1. Is there any difference between perceptions of principals, unit leaders, and unit teachers with regard to the real leader behavior of principals?

2. Is there any difference between perceptions of principals, unit leaders, and unit teachers with regard to the ideal leader behavior of principals?

3. Is there any difference between perceptions of

principals, unit leaders, and unit teachers with regard to the degrees of centralization, formalization, and stratification?

4. Is there any difference between perceptions of principals, unit leaders, and unit teachers with regard to the effectiveness of the I and R units?

5. Is there any relationship between school size and:

    a. the discrepancy between the real and ideal leader behavior of principals?

    b. the degrees of centralization, formalization, and stratification?

    c. the effectiveness of the I and R units?

Significance of the Study

This study was significant for three reasons. First, it provided information with regard to the perceived effectiveness of the I and R units and of the IGE/MUS-E principals. A literature search revealed that no studies which deal with these variables have been published. Second, the study delineated the interrelationships between principal leader behavior and the organizational means of centralization, formalization, and stratification. As the National Evaluation Committee of the Wisconsin Research and Development Center noted, research which illuminates the interactions between these variables is important to both the Center and the National Institute of Education. Third, the study indicated the amount of variation of the I and R unit effectiveness scores accounted for by the independent variables. Such information may prove to be valuable to Center personnel, school district personnel, and others in their attempts to improve the effectiveness of the I and R units.

Limitations of the Study

There are also three limitations to the study. First, it was not designed to control for the contribution of unit leaders to the effectiveness of the I and R units. Hence, the relationship between the leader behavior of principals and the effectiveness of the I and R units may be confounded by the contribution of unit leaders to the effectiveness of these units. Second, the study does not permit causal statements to be drawn; only statements of relationship may be inferred. Third, the study was limited to a stratified random sample of IGE multiunit elementary schools and, therefore, the results of the study may not be generalized to IGE/MUS-Es which do not meet the criteria for inclusion in the study or to non-IGE/MUS-Es.

Overview of the Study

This chapter contained an introduction to the study, a review of the theoretical frameworks and related literature germane to the study, a delineation of the hypotheses and ancillary questions tested, and a statement of the significance and limitations of the study. The general design and methodology of the study is presented in Chapter II. Chapter III contains a discussion of the results of the data analysis. A summary of the study and its findings, conclusions, and implications for theory, research, and practice are presented in Chapter IV.

CHAPTER II

DESIGN AND METHODOLOGY

This chapter contains a discussion of the general design and methodology of the study. The chapter consists of four sections which describe, respectively, (1) the survey instrument, (2) the study population and procedures for sample selection, (3) the procedures for data collection, and (4) the statistical techniques utilized in the analysis of the data.

Description of the Survey Instrument

In Chapter I, the interrelated effects of principal leader behavior and the organizational structure of IGE/MUS-Es were hypothesized to be predictors of I and R unit effectiveness. Congruent with this global hypothesis, the survey instrument adopted and/or developed for this study consisted of three sections: (1) Principal Leader Behavior Description, (2) Organizational Structure, and (3) I and R Unit Operations Questionnaire (Appendix C). A cover sheet communicated the intent of the study to the sample population and each section of the instrument was prefaced with brief directions to ensure appropriate completion by respondents.

Principal Leader Behavior Description.-- The Principal Leader Behavior Description section of the survey instrument consists of three oblique factors identified by House from a pool of thirty-five leader behavior items: (1) instrumental leadership (IL), (2) supportive leadership (SL), and (3) participative leadership (PL). Permission to use the Leader Behavior scale with minor modifications was granted to the investigator by House. Table 1 contains the factor loadings of the twenty-two items which comprise this scale.

TABLE 1

FACTOR LOADINGS OF LEADER BEHAVIOR ITEMS
(N = 198)

	Factor Loadings		
Item	I	II	III
Instrumental Leadership Items (IL)			
He lets group members know what is expected of them	.463	-.350	-.050
He decides what shall be done and how it shall be done	.831	.231	-.068
He makes sure that his part in the group is understood	.439	-.298	.053
He schedules the work to be done	.657	.267	.096
He maintains definite standards of performance	.767	.083	.167
He asks that group members follow standard rules and regulations	.629	-.001	-.008
He explains the way my tasks should be carried out	.465	-.180	.059
Supportive Leadership Items (SL)			
He is friendly and approachable	-.100	-.766	.013

TABLE 1 (Continued)

Item	Factor Loadings I	II	III
He does little things to make it pleasant to be a member of the group	-.025	-.969	-.232
He puts suggestions made by the group into operation	-.128	-.731	-.134
He treats all group members as his equals	-.317	-.993	.039
He gives advance notice of changes	-.064	-.662	.148
He keeps to himself	-.148	-.346	.228
He looks out for the personal welfare of group members	.127	-.650	.081
He is willing to make changes	.070	-.473	.227
He helps me overcome problems which stop me from carrying out my task	.232	-.456	.033
He helps me make working on my tasks more pleasant	.047	-.718	-.017
Participative Leadership Items (PL)			
When faced with a problem he consults with his subordinates	.110	.066	.771
Before making decisions he gives serious consideration to what his subordinates have to say	-.154	-.401	.618
He asks subordinates for their suggestions concerning how to carry out assignments	.125	.042	.675
Before taking action he consults with his subordinates	.008	.103	.724
He asks subordinates for suggestions on what assignments should be made	-.014	.176	.551

The wording of House's items was modified somewhat in order to direct respondent attention specifically to the leader behavior of the principal. Since all respondents completed each section of the instrument, separate forms were prepared for principals (Form P) and for unit leaders and unit teachers (Form T). A sample item from House's supportive leadership subscale, for example, reads as follows: "He is friendly and approachable." This item was altered to read, "I am friendly and approachable" (Form P) and "My principal is friendly and approachable" (Form T). In addition, the forms were color coded--green, blue, and pink for principals, unit leaders, and unit teachers, respectively--in order to differentiate the three reference groups.

Finally, since both real and ideal measures of the principal's leader behavior were obtained in order to generate derived indices of principal leadership effectiveness (as perceived by unit leaders and unit teachers) and principal satisfaction (as perceived by principals), House's response format also was modified. The original format was a Likert-type scale which consisted of five categories: (5) always, (4) often, (3) occasionally, (2) seldom, and (1) never. In the altered format, each item was accompanied by a five-point Likert-type scale for rating the real and ideal leader behavior of the principal. For principals, the choices ranged from (5) "I always act this way" (real) and "I should always act this way" (ideal) to (1) "I never act this way" (real) and "I should never act this way" (ideal). For unit leaders and unit teachers, the choices ranged from (5) "My principal always acts this way" (real) and "My principal should always act this way" (ideal) to (1) "My principal never acts this way" (real) and "My principal should never act this way" (ideal).

In order to obtain derived measures of principal leadership effectiveness, discrepancy scores (i.e., the absolute differences between perceptions of the real and ideal leader behavior of the principal) for unit leaders and for unit teachers were summed and a mean score calculated for each subscale. Similarly, in order to obtain a derived index of principal satisfaction, principal discrepancy scores were summed and a mean score calculated for each subscale.

Organizational Structure.— Organizational structure was defined in terms of three of Hage's input variables: centralization, formalization, and stratification.[1] As noted in Chapter I, the organizational mean of complexity was not used in this study because there is little variation in the number of occupational specialties and the level (length) of training required for these specialties across IGE/MUS-Es.

Hage operationally defined centralization, or the degree to which power is distributed in an organization, as the proportion of occupations whose incumbents participate in decision making and the number of areas in which they participate.[2] The measure of centralization utilized in this study was adopted from Herrick, who operationalized this variable along lines similar to those of Hetzel,[3] "but modified . . . to suit the population of public elementary school teachers."[4] Because there are a liminted number of social positions in these schools, Herrick constructed items which measured the frequency with which incumbents participated in decision making. His items concerned budget preparation, staff selection and evaluation, program recommendations, and similar matters. The utilization of these items is congruent with the findings of Hage and Aiken that decisions related to the allocation of organizational resources and the determination of organizational policy correlated more strongly with formalization, complexity,[5] and adaptiveness[6] than with the right to make less important decisions.

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[1] Jerald Hage, "An Axiomatic Theory of Organizations," ADMINISTRATIVE SCIENCE QUARTERLY, 10 (December, 1965), 293.

[2] Ibid.

The response format for the index of centralization is a Likert-type scale which consists of five categories: (1) almost always, (2) often, (3) sometimes, (4) seldom, and (5) almost never.

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[3] Robert W. Hetzel, "The Relationship Between Organizational Structure and Organizational Adaptability in Departments of Curriculum and Instruction" (unpublished doctoral dissertation, University of Wisconsin, 1971).

[4] H. Scott Herrick, "The Relationship of Organizational Structure to Teacher Motivation in Multiunit and Non-Multiunit Elementary Schools" (unpublished doctoral dissertation, University of Wisconsin-Madison, 1974), p. 37.

[5] Jerald Hage and Michael Aiken, "Relationship of Centralization to Other Structural Properties," ADMINISTRATIVE SCIENCE QUARTERLY, 12 (June, 1967), 72-92.

[6] Jerald Hage and Michael Aiken, "Program Change and Organizational Properties: A Comparative Analysis," AMERICAN JOURNAL OF SOCIOLOGY, 8 (March, 1967), 503-519.

Respondent scores on this subscale were summed and a mean score calculated for each reference group. Hence, the higher the mean score, the greater the school's centralization.

Hage operationally defined formalization as the degree of standardization and codification of work procedures and the degree of latitude allowed in the performance of the work.[7] The measure of formalization used in this study was adopted from Walter[8] and Summers.[9] Congruent with Walter's observation that "the limited number of social positions in the elementary school obviates the first measure" (index of job codification), the majority of items which constitute this subscale focused on Hage's second indicator, the range of variation allowed in job performance.[10]

The response format for the index of formalization, like that for the index of centralization, is a Likert-type scale consisting of five categories which range from (1) definitely true to (5) definitely false. Respondent scores on this subscale also were summed and a mean score determined for principals, unit leaders, and unit teachers. The scoring of all but one of these items

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[7] Hage, "Axiomatic Theory."

[8] James E. Walter, "The Relationship of Organizational Structure to Adaptiveness in Elementary Schools" (unpublished doctoral dissertation, University of Wisconsin-Madison, 1973).

[9] Stephen H. Summers, "Relationship of Bureaucratic Structural Dimensions to Organizational Adaptability and Job Satisfaction in College and University Divisions of Student Personnel Services" (unpublished doctoral dissertation, University of Wisconsin-Madison, 1973).

[10] Walter, "Relationship of Organizational Structure to Adaptiveness," p. 41.

(Appendix C, #13), however, was reversed so that a high mean score reflected a high degree of formalization.

Hage operationally defined stratification, or the differential distribution of rewards to the role incumbents of an organization, as the number of formal authority levels in the organization and the degree to which these levels are perceived to be linked with salary and status.[11] The measure of stratification utilized in this study was adopted from Walter, who maintained that very few formal rewards are distributed differentially in elementary schools. Rather, he stated that "status and rewards are more often provided in terms of special favors such as appointment to committees or first choice of new equipment."[12] The items selected by Walter reflected these types of rewards.

The response format for the index of stratification is identical to that for the index of formalization. Likewise, respondent scores were summed and a mean score calculated for the three reference groups. The scoring of these items also was reversed so that a high mean score reflected a high degree of stratification.

I and R Unit Operations Questionnaire.-- The I and R Unit Operations Questionnaire consists of fifty-one items adopted and/or adapted from a list of performance objectives identified by the Wisconsin Research and Development Center as being the responsibility of the I and R unit.[13] The items were grouped into the four performance-objective categories delineated by the Center: (1) Instructional Program, (2) Staff Development, (3) Organizational Operations, and (4) School-Community Relations. The response format for the Questionnaire is a Likert-type scale which consists of five categories ranging from (5) very effectively to (1) very ineffectively. Respondent mean scores were summed for each subscale and the total scale and a mean score calculated for each reference group.

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[11] Hage, "Axiomatic Theory."

[12] Walter, "Relationship of Organizational Structure to Adaptiveness," p. 42.

Population Definition and Sample Selection

The study population consisted of a stratified random sample of fifty IGE/MUS-Es which had been operational for two or more years and which met the following minimal standards recommended by the Wisconsin Research and Development Center: the school (1) is fully unitized, (2) has multiage grouping in each I and R unit, (3) has an Instructional Improvement Committee which meets at least once per week, and (4) applies the Instructional Programming Model to at least one curricular area.[14] A telephone survey (Appendix D) was conducted to identify those schools listed in the 1972-1973 IGE/MULTIUNIT ELEMENTARY SCHOOL DIRECTORY which satisfied these criteria.[15] Only schools which had implemented IGE no earlier than the fall of 1971 and no later than the fall of 1972 were considered for participation in the study. These time constraints were imposed because the former marked the first time that implementation of IGE was accomplished by following the Center's implementation strategy and by using a common set of inservice materials, and because the latter ensured that the majority of unit leaders and unit teachers had been exposed to the building principal for a sufficient length of time to assess accurately his/her leader behavior. PROGRAM IRANDX was used to generate a list of fifty-five IGE/MUS-Es which met the selection criteria.[16]

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[13] Herbert J. Klausmeier, et al., INDIVIDUALLY GUIDED EDUCATION AND THE MULTIUNIT ELEMENTARY SCHOOL: GUIDELINES FOR IMPLEMENTATION, (Madison: Wisconsin Research and Development Center for Cognitive Learning, 1971), pp. 91-126.

[14] Roderick A. Ironside, THE 1971-72 NATIONWIDE INSTALLATION OF THE MULTIUNIT/IGE MODEL FOR ELEMENTARY SCHOOLS: A PROCESS EVALUATION. A study conducted under contract with the Office of Program Planning and Evaluation, U. S. Office of Education, Department of Health, Education, and Welfare, OE Contract Number 0-71-3705. (Durham: Educational Testing Service, 1971), Vol. I, p. 15.

State IGE Coordinators were sent letters which contained a list of the school(s) selected in their respective states and a brief description of the nature of the study (Appendix E). After the Coordinators had been notified, the principals were asked to participate in the study. A total of fifty principals from eleven states agreed to take part. Five principals declined to participate because they felt the administration of the survey instrument would interfere with previously scheduled school activities. Table 2 contains a list of the states and the number of schools in each state which participated in the study.

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[15] 1972-1973 IGE/MULTIUNIT ELEMENTARY SCHOOL DIRECTORY, (Madison: Wisconsin Research and Development Center for Cognitive Learning, 1973)

[16] Dennis W. Spuck and Donald N. McIsaac, Jr., PROGRAM IRANDX (Random Sampling Program), (Madison: Wisconsin Information Systems for Education, 1971). (Mimeographed.)

TABLE 2

STATES AND NUMBER OF SCHOOLS WHICH PARTICIPATED IN STUDY

State	Number of Schools
Colorado	5
Connecticut	6
Illinois	8
Maine	1
Minnesota	4
New Jersey	2
New York	1
Ohio	6
South Carolina	3
Virginia	1
Wisconsin	13
TOTAL	50

Procedures for Data Collection

A packet of materials was mailed to each of the participating schools in care of the building principal. Each packet consisted of (1) a letter to the principal which contained directions for the distribution and administration of the survey instruments, (2) a note to the teacher designee which contained directions for the collection and return of the completed instruments, (3) the instruments, and (4) a postage paid bag for the return of the instruments to the Wisconsin Research and Development Center (Appendix F).

Table 3 contains the number of survey instruments sent and received, and the percentage of instruments received from the three reference groups.

TABLE 3

NUMBER OF INSTRUMENTS SENT, RECEIVED, AND PERCENTAGE OF INSTRUMENTS RECEIVED: BY REFERENCE GROUP

Reference Group	Sent	Received	Percentage
Principals	50	50	100
Unit Leaders	217	206	94.9
Unit Teachers	749	666	88.9
TOTAL	1016	922	90.8

Analysis of the Data

Reliability.— The reliability of the survey instrument was obtained twice, once in the pilot study and again in the main study. In the pilot study, 109 unit leaders and unit teachers from six Wisconsin IGE/MUS-Es, which met the criteria for participation in the main study, completed the survey instrument.

An instrument is reliable to the extent that measurement error is slight. Hence, the lower the error, the greater the reliability.[17]

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[17] Fred N. Kerlinger, FOUNDATIONS OF BEHAVIORAL RESEARCH: EDUCATIONAL AN PSYCHOLOGICAL INQUIRY, (New York: Rinehart and Winston, 1965), p. 434.

The American Psychological Association identified three types of reliability coefficients: stability, equivalence, and internal consistency.[18] Since the type of measurement error of greatest concern to this study was that due to variation within the same instrument, an estimate of internal consistency was used to determine the reliability of the various scales. This estimate, which is concerned primarily with errors in the sample of items, is an index of the degree to which an instrument accurately represents the domain of interest.[19] Coefficient Alpha, a derivative of the parallel-forms model of test reliability, was the specific technique used in this study. It represents the expected correlation of one k-item with all other k-items drawn from the same domain. Nunnally expressed the formula for Coefficient Alpha thusly:[20]

$$r_{kk} = \frac{k}{k-1}\left(\frac{\sigma y^2 - \Sigma\sigma i^2}{\sigma y^2}\right)$$

where,

k = the number of items in the scale or test

$\Sigma\sigma i^2$ = the standard deviation of items in the scale or test

σy^2 = the standard deviation of the scale or test

Program TSTAT was used to compute alpha coefficients for each subscale in the survey instrument.[21] Table 4 contains the pilot test and post hoc reliability coefficients for the Principal Leader Behavior Description subscales.

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[18] "Technical Recommendations for Psychological Tests and Diagnostic Techniques," SUPPLEMENT TO THE PSYCHOLOGICAL BULLETIN, 51 (March, 1954).

[19] Jum C. Nunnally, PSYCHOMETRIC THEORY, (New York: McGraw-Hill, 1967), pp. 210-211.

[20] Ibid., p. 196.

TABLE 4

PILOT TEST AND POST HOC RELIABILITY COEFFICIENTS FOR PRINCIPAL LEADER BEHAVIOR DESCRIPTION

Subscale	Pilot Test Reliability		Post Hoc Reliability	
	Real	Ideal	Real	Ideal
Instrumental Leadership	.8300	.8843	.8209	.8573
Supportive Leadership	.9102	.9313	.8448	.9028
Participative Leadership	.8791	.8871	.7208	.8049

Spuck indicated that alpha coefficients below .50 are of questionable reliability, whereas those between .50 and .70 are satisfactory for early stages of research, and those above .70 possess high degrees of internal consistency.[22] Since the pilot test and post hoc reliability coefficients obtained for the three leader behavior subscales exceeded .70, they were considered to possess sufficient degrees of internal consistency.

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[21] Dennis W. Spuck, PROGRAM TSTAT (Test Reliability and Item Analysis Program), (Madison: Wisconsin Information Systems for Education, 1971). (Mimeographed.)

[22] Dennis W. Spuck, TECHNICAL REPORT: ITEM ANALYSIS AND RELIABILITY OF SCHOOL SENTIMENT INDEX, (Madison: University of Wisconsin, 1971). (Mimeographed.)

Table 5 contains the pilot test and post hoc reliability coefficients for the Organizational Structure and I and R Unit Operations Questionnaire subscales. All but two of these coefficients (the post hoc reliability coefficients for Formalization and Staff Development) exceeded the level Spuck cited as necessary for a high degree of reliability.

TABLE 5

PILOT TEST AND POST HOC RELIABILITY COEFFICIENTS FOR ORGANIZATIONAL STRUCTURE AND I AND R UNIT OPERATIONS QUESTIONNAIRE

Subscale	Pilot Test Reliability	Post Hoc Reliability
Centralization	.9000	.8485
Formalization	.7566	.5834
Stratification	.8908	.8555
Instructional Program	.9081	.8567
Staff Development	.8035	.6525
Organizational Operations	.9077	.9589
School-Community Relations	.7885	.9546
I and R Unit Total	.9498	.8668

Validity.-- Reliability is a necessary but insufficient condition for test validity. Whereas reliability indicates the accuracy with which an instrument represents the domain of interest, validity reflects the degree to which the instrument is capable of achieving the purpose(s) for which it was intended.[23] The American Psychological Association identified four types of validity: content, predictive, concurrent, and construct.[24] The type of validity of greatest concern to this study was content validity, or the adequacy with which a specified domain of content is sampled.[25] In order to ascertain whether or not the I and R Unit Operations Questionnaire contained a representative sample of items and was characterized by "sensible" methods of test construction, the Questionnaire was submitted to three panels of experts prior to the pilot test: (1) graduate students associated with the organizational-administrative research component of the Wisconsin Research and Development Center, (2) professors of educational administration, and (3) members of the Center's implementation staff and Department of Technical Services. The Questionnaire was accepted as having content validity.

Furthermore, the I and R Unit Operations Questionnaire was factor analyzed to determine if it possessed construct validity, or the degree to which certain explanatory constructs account for performance on a given instrument.[26] R-mode principal components analysis, which "extracts factors [from a product-moment correlation matrix] in the order (largest to smallest) of variance accounted for," was used to determine the linear combination which explained the greatest amount of variance in the main study population.[27] The number of factors (and hence, eigen values) to be extracted was set at six and the correlation matrix rotated according to the varimax method in order to describe a reduced matrix of loadings ("simple structure") on the major indices of unit operations. The results of the factor analysis indicated that the Center's categories of Instructional Program, Staff Development, Organizational Operations, and School-Community Relations collapsed to one overall measure of unit effectiveness, whose factor variance (2.60) explained sixty-five per cent of the total variance (4.00) of the Questionnaire.

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[23] Abraham Kaplan, THE CONDUCT OF INQUIRY: METHODOLOGY FOR THE BEHAVIORAL SCIENCES, (San Francisco: Chandler, 1964), p. 168.

[24] "Technical Recommendations."

[25] Nunnally, PSYCHOMETRIC THEORY, pp. 79-82.

[26] _Ibid._, pp. 83-94.

Methods of Analysis.-- Since the unit of analysis in this study was the school building, individual scores were converted into building means for the Principal Leader Behavior and Organizational Structure subscales and for I and R unit total effectiveness. Hypotheses one through nine were tested by comparing the mean discrepancy scores of principal leader behavior and the mean scores of I and R unit total effectiveness and the organizational-structural dimensions to ascertain whether or not significant relationships existed between (1) principal leader behavior and I and R unit total effectiveness, (2) principal leader behavior and the organizational-structural dimensions, and (3) the organizational-structural dimensions and I and R unit total effectiveness. Pearson product-moment correlations were used to determine the strength and direction of these relationships.[28] The computations were carried out using the STEPREG1 computer program.[29]

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[27] Dennis W. Spuck, Donald N. McIsaac, Jr., and John N. Berg, PROGRAM BIGFACT (Rand Q-Mode Factor Analysis Program), (Madison: Wisconsin Information Systems for Education, 1972). (Mimeographed.)

Linear regression analysis was utilized to test hypotheses ten through twelve, which concerned the relationships between the set of independent (predictor) variables--principal leader behavior and the organizational-structural dimensions--and the dependent (criterion) variable, I and R unit total effectiveness.[30] This technique generates an equation for predicting the dependent variable from information known about two or more independent variables. Since the equation is based on the assumption that the relationships between the variables are linear, the analysis focused on three questions:[31]

1. Does a linear relationship exist between the independent and dependent variables?
2. How strong is that relationship?
3. How useful is the linear equation in predicting the dependent variable?

Because there was no a priori basis for determining which of the independent variables would account for the greatest amount of variation of the dependent variable, the specific procedure used to

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[28] William L. Hays, STATISTICS FOR PSYCHOLOGISTS, (New York: Holt, Rinehart, and Winston, 1963), pp. 493-538.

[29] James Allen, STEPREG1: Stepwise Linear Regression Analysis, (Madison: University of Wisconsin Academic Computing Center, 1973).

[30] Hays, STATISTICS, pp. 490-523.

[31] _Ibid_., p. 491.

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test hypotheses ten through twelve was stepwise linear regression analysis.[32] This procedure permitted an assessment of both the individual and combined effects of the independent variables on the dependent variable.

The individual effects of the independent variables on the dependent variable were determined by examining (1) the partial correlation coefficients, which indicated the amount of total variation of the dependent variable accounted for by each independent variable, (2) the partial F test, which indicated whether or not the introduction of a new variable at a particular step resulted in a significant increase in the coefficient of determination, and (3) the standardized regression coefficients, which represented the relative importance of each independent variable to the total regression equation.[33]

The combined effect of the independent variables on the dependent variable was determined by examining (1) the multiple correlation coefficient, which indicated whether or not a linear relationship existed and, if so, the strength of that relationship, (2) the F test, which measured the significance of the variation explained by the combination of the independent variables, (3) the standard error of estimate, which reflected the degree of accuracy with which the regression equation predicted the dependent variable, and (4) the coefficient of determination or square of the multiple correlation coefficient, which is the percentage of variation of the dependent variable explained by the set of independent variables presently in the regression equation.[34] The computations were carried out using the STEPREG1 computer program.[35]

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[32] N. R. Draper and H. Smith, APPLIED REGRESSION ANALYSIS, (New York: Wiley and Sons, 1968), pp. 104-127.

[33] Mordecai Ezekiel and Karl A. Fox, METHODS OF CORRELATION AND REGRESSION ANALYSIS: LINEAR AND CURVILINEAR, (New York: Wiley and Sons, 1963), p. 147.

One-way (fixed-effects) analysis of variance was utilized to test ancillary questions one through four, which dealt, respectively, with differences between the perceptions of principals, unit leaders, and unit teachers with regard to the real and ideal leader behavior of principals, the organizational-structural dimensions, and I and R unit total effectiveness.[36] The computations were carried out using the NWAY1 computer program.[37] Scheffé post hoc tests were performed in order to identify the pairwise differences among mean scores which accounted for the significant F ratios.[38] Pearson product-moment correlations were used to test the final ancillary question, which concerned the relationship between school size (number of students) and the independent and dependent variables.[39] The computations were carried out using the DSTAT2 computer program.[40]

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[34] Hays, STATISTICS, pp. 498-499, 502.

[35] Allen, STEPREG1.

[36] Hays, STATISTICS, pp. 356-385.

[37] Jeremy Learn, NWAY1: General Analysis of Variance, (Madison: University of Wisconsin Academic Computing Center, 1970).

[38] Hays, STATISTICS, p. 484.

[39] Ibid., pp. 493-538.

[40] W. H. Wetterstrand, DSTAT2: Descriptive Statistics and Correlation, (Madison: University of Wisconsin Academic Computing Center, 1973).

Summary

This chapter contained a description of the general design and methodology of the study. Emphasis was placed on instrument development, sample definition and selection procedures, data collection procedures, and statistical analysis of the data. Chapter III contains a discussion of the results of the data analysis.

CHAPTER III

PRESENTATION OF THE DATA

This chapter consists of four sections. The first contains a preliminary analysis of the sample data. Section two contains the results of the correlation analyses used to examine the interrelationships between principal leader behavior, I and R unit total effectiveness, and the organizational-structural dimensions, as delineated by hypotheses one through nine. The third contains the results of the stepwise linear regression analyses used to examine the individual and combined effects of the set of independent (predictor) variables--principal leader behavior and the organizational-structural dimensions--on the dependent (criterion) variable, I and R unit total effectiveness, as delineated by hypotheses ten through twelve. Section four contains the results of the statistical analyses used to test the ancillary questions, which concern differences in the perceptions of principals, unit leaders, and unit teachers with regard to the real and ideal leader behavior of principals, I and R unit total effectiveness, and the organizational-structural dimensions; and the relationship of school size (number of students) to the independent and dependent variables.

Preliminary Analysis of the Data

Before testing the hypotheses and ancillary questions, a preliminary analysis of the data was conducted in order to augment discussion of the results of the data analyses. The results of this analysis are presented in Tables 6, 7, and 8, which contain--for principals, unit leaders, and unit teachers, respectively--the means, standard deviations, and coefficients of skewness and kurtosis of the independent and dependent variables. The computations were carried out using the UNISTAT1 computer program.[1]

As noted in Chapter II, the mean scores of the leader behavior subscales for the hypotheses are discrepancy measures (i.e., the absolute differences between perceptions of the real and ideal leader behavior of principals) which reflect, for principals, derived indices of their satisfaction with their leader behavior, and for unit leaders and unit teachers, derived indices of their perceptions of the leadership effectiveness of principals. The mean scores of the independent and dependent variables revealed an interesting trend: with the exception of instrumental leadership and formalization, the means increased as one moved from principals to unit leaders to unit teachers. The largest increase concerned the participative leader behavior of principals. Whereas principals evidenced considerable satisfaction with their participative leader behavior ($\overline{X} = .33$), unit leaders ($\overline{X} = .61$) and unit teachers ($\overline{X} = .74$) perceived a much larger discrepancy between

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[1] Peter Wolfe, UNISTAT1: Univariate Descriptive Statistics and Histograms, (Madison: University of Wisconsin Academic Computing Center, 1972).

TABLE 6

DESCRIPTIVE STATISTICS OF PRINCIPAL SAMPLE POPULATION

Statistic	Variables						
	Instrumental Leadership	Supportive Leadership	Participative Leadership	Centralization	Formalization	Stratification	Total Effectiveness
Mean	.51	.53	.33	1.47	3.01	2.61	2.35
Standard Deviation	.32	.26	.32	.36	.42	.80	.39
Coefficient of Skewness	-.05	-.24	.61	.97	.39	.42	-.63
Coefficient of Kurtosis	2.19	2.70	2.14	4.07	3.82	2.43	3.36

TABLE 7

DESCRIPTIVE STATISTICS OF UNIT LEADER SAMPLE POPULATION

Statistic	Variables						
	Instrumental Leadership	Supportive Leadership	Participative Leadership	Centralization	Formalization	Stratification	Total Effectiveness
Mean	.74	.68	.61	2.73	2.90	2.87	2.46
Standard Deviation	.64	.58	.64	.74	.56	.90	.49
Coefficient of Skewness	1.14	1.30	1.56	.13	.33	-.05	.60
Coefficient of Kurtosis	4.39	4.99	5.47	2.45	3.20	2.37	4.43

TABLE 8

DESCRIPTIVE STATISTICS OF UNIT TEACHER SAMPLE POPULATION

Statistic	Variables						
	Instrumental Leadership	Supportive Leadership	Participative Leadership	Centralization	Formalization	Stratification	Total Effectiveness
Mean	.68	.77	.74	3.21	2.89	3.11	2.57
Standard Deviation	.60	.64	.71	.68	.60	.99	.56
Coefficient of Skewness	1.11	1.03	1.16	-.11	.12	-.26	.31
Coefficient of Kurtosis	4.61	3.75	3.97	2.78	2.86	2.33	2.94

the real and ideal participative leader behavior of this reference group. Correspondingly, whereas principals characterized IGE/MUS-Es as having a low degree of centralization of decision making ($\overline{X} = 1.47$), unit leaders ($\overline{X} = 2.73$) and unit teachers ($\overline{X} = 3.21$) viewed these schools as being substantially more centralized. In general, principals perceived a smaller discrepancy between their real and ideal leader behavior than did unit leaders and unit teachers; viewed IGE/MUS-Es as less centralized, less stratified, and more formalized than these reference groups; and perceived I and R units to be less effective than did unit leaders and unit teachers.

Although the standard deviations of the independent and dependent variables were quite small across all three reference groups, the scores of principals evidenced less variation than those of unit leaders and unit teachers. Since correlations are sensitive to the variation of scores, the smaller amount of variation of scores evidenced by principals may have tended to depress the relationships between the independent and dependent variables for this reference group.

The coefficients of skewness and kurtosis indicated, respectively, that the distributions of the majority of variables were skewed somewhat positively (median < mean) and that the distributions of all variables were characterized by a high degree of positive kurtosis (peakedness). Hence, the distributions of the variables were somewhat asymmetric and the three reference groups, taken separately, evidenced high degrees of consensus with regard to their perceptions of the variables.

Analysis of Hypotheses One Through Nine

Pearson product-moment correlations were used to examine the interrelationships between principal leader behavior, I and R unit total effectiveness, and the organizational-structural dimensions, as delineated by hypotheses one through nine. Tables 9, 10, and 11 contain—for principals, unit leaders, and unit teachers, respectively—the correlation matrices for the independent and dependent variables.

Table 9 indicates that the relationships between principals' satisfaction with their leader behavior and their perceptions of I and R unit total effectiveness were not significant at the .05 level. On the other hand, unit leaders' (Table 10) and unit teachers' (Table 11) perceptions of the instrumental, supportive, and participative leadership effectiveness of principals evidenced significantly positive correlations with their perceptions of I and R unit total effectiveness. Hence,

> Hypothesis 1: There is no relationship between perceptions of principals with regard to the discrepancy between their real and ideal leader behavior and their perceptions of the effectiveness of the I and R units

could not be rejected at the .05 level, whereas

> Hypothesis 2: There is no relationship between perceptions of unit leaders with regard to the discrepancy between the real and ideal leader behavior of principals and their perceptions of the effectiveness of the I and R units

and

> Hypothesis 3: There is no relationship between perceptions of unit teachers with regard to the discrepancy between the real and ideal leader behavior of principals and their perceptions of the effectiveness of the I and R units

were rejected at the .05 and .01 levels of significance, respectively.

TABLE 9

PRINCIPAL CORRELATION MATRIX FOR INDEPENDENT AND DEPENDENT VARIABLES
(N = 39)

Variable	Instrumental Leadership	Supportive Leadership	Participative Leadership	Centralization	Formalization	Stratification	I & R Unit Total Effectiveness
Instrumental Leadership	1.000						
Supportive Leadership	.620**	1.000					
Participative Leadership	.477**	.521**	1.000				
Centralization	.187	.242	.079	1.000			
Formalization	-.143	-.168	-.031	-.117	1.000		
Stratification	-.110	-.165	-.095	.026	.084	1.000	
I & R Unit Total Effectiveness	.104	.106	.045	.091	-.308*	-.089	1.000

*significant at or beyond the .05 level
**significant at or beyond the .01 level

TABLE 10

UNIT LEADER CORRELATION MATRIX FOR INDEPENDENT AND DEPENDENT VARIABLES
(N = 123)

Variable	Instrumental Leadership	Supportive Leadership	Participative Leadership	Centralization	Formalization	Stratification	I & R Unit Total Effectiveness
Instrumental Leadership	1.000						
Supportive Leadership	.636**	1.000					
Participative Leadership	.553**	.751**	1.000				
Centralization	.150	.173	.321**	1.000			
Formalization	-.338**	-.060	-.089	.042	1.000		
Stratification	.386**	.451**	.381**	.128	-.039	1.000	
I & R Unit Total Effectiveness	.218*	.207*	.184*	.225*	-.228*	.219*	1.000

*significant at or beyond the .05 level
**significant at or beyond the .01 level

TABLE 11

UNIT TEACHER CORRELATION MATRIX FOR INDEPENDENT AND DEPENDENT VARIABLES
(N = 398)

Variable	Instrumental Leadership	Supportive Leadership	Participative Leadership	Centralization	Formalization	Stratification	I & R Unit Total Effectiveness
Instrumental Leadership	1.000						
Supportive Leadership	.644**	1.000					
Participative Leadership	.562**	.779**	1.000				
Centralization	.203**	.404**	.421**	1.000			
Formalization	-.205**	.084	.055	.152**	1.000		
Stratification	.280**	.328**	.273**	.294**	.105	1.000	
I & R Unit Total Effectiveness	.299**	.324**	.310**	.334**	-.133**	.118*	1.000

*significant at or beyond the .05 level
**significant at or beyond the .01 level

Table 9 indicates that the relationships between principals' satisfaction with their leader behavior and their perceptions of the organizational-structural dimensions were not significant at the .05 level. Hence,

> Hypothesis 4: There is no relationship between perceptions of principals with regard to the discrepancy between their real and ideal leader behavior and their perceptions of the degrees of centralization, formalization, and stratification

could not be rejected at the .05 level.

Unit leaders' (Table 10) perceptions of the instrumental leadership effectiveness of principals evidenced a significantly negative correlation with their perceptions of the degree of formalization and a significantly positive correlation with their perceptions of the degree of stratification. In addition, unit leaders' perceptions of supportive leadership effectiveness and the degree of stratification evidenced a significantly positive relationship. Finally, unit leaders' perceptions of participative leadership effectiveness and the degrees of centralization and formalization evidenced significantly positive correlations. The relationships between the degree of centralization and instrumental and supportive leadership effectiveness and those between the degree of formalization and supportive and participative leadership effectiveness were not significant at the .05 level. Hence,

> Hypothesis 5: There is no relationship between perceptions of unit leaders with regard to the discrepancy between the real and ideal leader behavior of principals and their perceptions of the degrees of centralization, formalization, and stratification

in part was rejected at the .01 level.

Unit teachers' (Table 11) perceptions of the instrumental, supportive, and participative leadership effectiveness of principals evidenced significantly positive correlations with their perceptions of the degrees of centralization and stratification, whereas their perceptions of instrumental leadership effectiveness and the degree of formalization evidenced a significantly negative correlation. The relationships between the degree of formalization and supportive and participative leadership effectiveness were not significant at the .05 level. Hence,

> Hypothesis 6: There is no relationship between perceptions of unit teachers with regard to the discrepancy between the real and ideal leader behavior of principals and their perceptions of the degrees of centralization, formalization, and stratification

in part was rejected at the .01 level.

Principals' (Table 9) perceptions of the degree of formalization and I and R unit total effectiveness evidenced a significantly negative relationship, whereas those between the degrees of centralization and stratification and unit effectiveness were not significant at the .05 level. Unit leaders' (Table 10) and unit teachers' (Table 11) perceptions of the degrees of centralization and stratification and unit effectiveness, on the other hand, evidenced significantly positive correlations, while their perceptions of the degree of formalization and unit effectiveness evidenced a significantly negative correlation. Hence,

> Hypothesis 7: There is no relationship between perceptions of principals with regard to the degrees of centralization, formalization, and stratification and their perceptions of the effectiveness of the I and R units

in part was rejected at the .05 level, and

> Hypothesis 8: There is no relationship between perceptions of unit leaders with regard to the degrees of centralization, formalization, and stratification and their perceptions of the effectiveness of the I and R units,

and

> Hypothesis 9: There is no relationship between perceptions of unit teachers with regard to the degrees of centralization, formalization, and stratification and their perceptions of the effectiveness of the I and R units

were rejected at either the .05 or the .01 level of significance.

Analysis of Hypotheses Ten Through Twelve

Stepwise linear regression analysis was utilized to examine the individual and combined effects of the set of independent (predictor) variables—principal leader behavior and the organizational-structural dimensions--on the dependent (criterion) variable, I and R unit total effectiveness, as delineated by hypotheses ten through twelve. One regression model was generated for relating the independent variables to the dependent variable: all independent variables, designated as free variables, were regressed on the dependent variable, utilizing a forward selection procedure with no inclusion (P_{in}) or exclusion (P_{ex}) criterion specified.

Table 12 and the first sections of Tables 13 and 14--which contain the results of the regression analyses for principals, unit leaders, and unit teachers, respectively--delineate, for each variable in the equation, (1) the name of the independent variable entered into the equation, (2) the multiple correlation coefficient, which indicated whether or not a linear relationship existed and, if so, the strength of that relationship, (3) the coefficient of determination or square of the multiple correlation coefficient, which is the percentage of variation of the dependent variable explained by the set of independent variables presently in the regression equation, (4) the F test, which measured the significance of the variation explained by the combination of the independent variables, and (5) the partial F test, which indicated whether or not the introduction of a new variable at a particular step resulted in a significant increase in the coefficient of determination. The second section of Tables 13 and 14 delineate, for each variable whose partial F value was significant at or beyond the .05 level, the standardized regression coefficients, which represented the relative importance of each independent variable to the total regression equation.

Table 12 illustrates the relationship between principals' perceptions of the independent variables—principal leader behavior and the organizational-structural dimensions—and the dependent variable, I and R unit total effectiveness. Over 10 per cent of the variation of principals' perceptions of unit effectiveness was explained by the independent variables. Although the F tests indicated that none of the predictor variables accounted for a significant amount of the variation of unit effectiveness, the organizational mean of formalization, which explained 9.46 per cent of the variation of the dependent variable and whose correlation with unit effectiveness (Table 9) was significant at the .05 level, is of substantive interest ($\alpha = .057$).

Table 13 illustrates the relationship between unit leaders' perceptions of the independent variables--principal leader behavior

TABLE 12

PRINCIPAL REGRESSION ANALYSIS WITH DEPENDENT VARIABLE OF I AND R UNIT TOTAL EFFECTIVENESS

Step No.	Variable Entered	Multiple Correlation Coefficient	Coefficient of Determination	F Test for Significance	Partial F Value
1	Formalization	.3075	.0946	3.86	3.86
2	Stratification	.3141	.0986	1.97	.16
3	Centralization	.3194	.1020	1.33	.13
4	Instrumental Leadership	.3225	.1040	.99	.08
5	Supportive Leadership	.3226	.1041	.77	.00
6	Participative Leadership	.3226	.1041	.62	.00

and the organizational-structural dimensions--and the dependent variable, I and R unit total effectiveness. Nearly 15 per cent of the variation of unit leaders' perceptions of unit effectiveness was explained by the first five of six independent variables. Although the F tests indicated that a significant amount of the variation of unit effectiveness was accounted for by the predictor variables at each step in the regression analysis, the partial F values reflected a significant increase in the coefficient of determination only when, at Steps 1, 2, and 3, the organizational means of formalization, centralization, and stratification, respectively, were entered into the equation. Over 5 per cent of the variation of unit effectiveness was explained by formalization, a total of 10.70 per cent after the addition of centralization, and a total of 14.01 per cent after the addition of stratification. The correlations between each of these variables and unit effectiveness (Table 10) also were significant. Both the correlation coefficients and the standardized regression coefficients indicated positive relationships between unit effectiveness and the degrees of centralization and stratification, and a negative relationship between unit effectiveness and the degree of formalization. The standardized regression coefficients also indicated that formalization and centralization were of nearly equal potency to the regression equation at the third step, whereas stratification was somewhat less potent. The inclusion of supportive and participative leadership effectiveness resulted only in a slight (.87 per cent) increase in the amount of explained variation of unit effectiveness, and the addition of instrumental leadership effectiveness to the equation did not increase the coefficient of determination.

TABLE 13

UNIT LEADER REGRESSION ANALYSIS WITH DEPENDENT VARIABLE OF I AND R UNIT TOTAL EFFECTIVENESS

Step No.	Variable Entered	Multiple Correlation Coefficient	Coefficient of Determination	F Test for Significance	Partial F Value
1	Formalization	.2278	.0519	6.62*	6.62*
2	Centralization	.3272	.1070	7.19**	7.41**
3	Stratification	.3743	.1401	6.46**	4.57*
4	Supportive Leadership	.3835	.1471	5.09**	.97
5	Participative Leadership	.3857	.1488	4.09**	.24
6	Instrumental Leadership	.3857	.1488	3.38**	.00

*significant at or beyond the .05 level
**significant at or beyond the .01 level

STANDARDIZED REGRESSION COEFFICIENTS

Step No.	Formalization	Centralization	Stratification
1	-.2278		
2	-.2377	.2351	
3	-.2295	.2113	.1834

100

Table 14 illustrates the relationship between unit teachers' perceptions of the independent variables--principal leader behavior and the organizational-structural dimensions--and the dependent variable, I and R unit total effectiveness. Nearly 20 per cent of the variation of unit teachers' perceptions of unit effectiveness was explained by the independent variables. Although the F tests indicated that a significant amount of the variation of unit effectiveness was accounted for by the predictor variables at each step in the regression analysis, the partial F values reflected a significant increase in the coefficient of determination only when, at Steps 1, 2, 3, and 4, centralization, instrumental leadership effectiveness, formalization, and supportive leadership effectiveness, respectively, were entered into the equation. Over 11 per cent of the variation of unit effectiveness was explained by centralization, a total of 16.72 per cent after the addition of instrumental leadership effectiveness, a total of 18.47 per cent after the addition of formalization, and a total of 19.66 per cent after the addition of supportive leadership effectiveness. The correlations between each of these variables and unit effectiveness (Table 11) also were significant. Both the correlation coefficients and the standardized regression coefficients indicated positive relationships between unit effectiveness and the leader behavior subscales and the degree of centralization, and a negative relationship between unit effectiveness and the degree of formalization. The standardized regression coefficients also indicated that centralization was the most potent variable in the regression equation at the fourth step, followed by formalization and supportive leadership effectiveness, which were of nearly equal potency, and

TABLE 14

UNIT TEACHER REGRESSION ANALYSIS WITH DEPENDENT VARIABLE OF I AND R UNIT TOTAL EFFECTIVENESS

Step No.	Variable Entered	Multiple Correlation Coefficient	Coefficient of Determination	F Test for Significance	F Value
1	Centralization	.3335	.1112	49.56**	49.56**
2	Instrumental Leadership	.4089	.1672	39.66**	26.57**
3	Formalization	.4298	.1847	29.76**	8.45**
4	Supportive Leadership	.4433	.1966	24.04**	5.79*
5	Participative Leadership	.4445	.1976	19.31**	.52
6	Stratification	.4454	.1984	16.31**	.40

*significant at or beyond the .05 level
**significant at or beyond the .01 level

STANDARDIZED REGRESSION COEFFICIENTS

Step No.	Centralization	Instrumental Leadership	Formalization	Supportive Leadership
1	.3335			
2	.2844	.2417		
3	.3123	.2077	-.1379	
4	.2731	.1088	-.1655	.1572

instrumental leadership effectiveness. The inclusion of participative leadership effectiveness and stratification resulted only in a slight (.18 per cent) increase in the amount of explained variation of unit effectiveness.

Although the results of the regression analyses provided insights into the relationships between the independent and dependent variables, additional information of concern to these analyses was presented in the correlation matrices for unit leaders (Table 10) and unit teachers (Table 11). The forward stepwise procedure utilized in the regression analyses entered the independent variable which explained the greatest amount of variation of the dependent variable first, that which accounted for the next largest amount of variation second, and so forth. In the regression analysis for unit leaders (Table 13), the organizational mean of formalization was entered first and the leader behavior subscales last. It is of interest, however, that the correlations between unit leaders' perceptions of the instrumental, supportive, and participative leadership effectiveness of principals and unit effectiveness were only .010, .021, and .044 less, respectively, than the correlations between their perceptions of formalization and unit effectiveness. Hence, it is reasonable to assume that, had formalization been withheld from the regression equation, the leader behavior subscales would have played an important role in explaining the variation of unit effectiveness. Indeed, the partial F values for unit teachers' (Table 14) perceptions of the instrumental and supportive leadership effectiveness of principals were significant at the .01 and .05 levels, respectively. Furthermore, the correlations between unit teachers' (Table 11) perceptions of the participative leadership effectiveness of principals (which entered the regression equation at the fifth step) and unit effectiveness was only .024 less than that between their perceptions of the degree of centralization (which entered the equation at the first step) and unit effectiveness. Hence, if centralization had been withheld from the regression equation, participative leadership effectiveness probably would have explained a significant amount of the variation of unit effectiveness.

Kerlinger indicated that most variables which correlate with a dependent variable also correlate among themselves. The relationships between unit leaders' perceptions of instrumental and supportive leadership effectiveness (.636), instrumental and participative leadership effectiveness (.553), and supportive and participative leadership effectiveness (.751) substantiate this observation. Kerlinger also noted that the ideal predictive situation is one in which the correlations between the independent and dependent variables are high and those among the independent variables are low.[2] The correlation coefficients reported in Table 10, however, indicate that unit leaders' perceptions of the leader behavior subscales clearly are interdependent. Squaring these coefficients revealed that instrumental and supportive leadership effectiveness shared 41 per cent of the variation of principal leadership effectiveness, instrumental and participative leadership effectiveness shared 31 per cent of the variation, and supportive and participative leadership effectiveness shared 56 per cent of the variation of principal leadership effectiveness. Principals' (Table 9) and unit teachers' (Table 11) perceptions of these variables also were highly interdependent, whereas the perceptions of all three reference groups with regard to the organizational-structural dimensions were intercorrelated to a much lesser extent.

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[2] Fred N. Kerlinger, FOUNDATIONS OF BEHAVIORAL RESEARCH: EDUCATIONAL AND PSYCHOLOGICAL INQUIRY, (New York: Holt, Rinehart, and Winston, 1973), p. 622.

In summary, the regression analysis for principals revealed no significant relationships between the independent and dependent variables, whereas those for unit leaders and unit teachers evidenced significant relationships between several of the predictor variables and the dependent variable. For unit leaders, the organizational-structural dimensions were significant predictors of the dependent variable, whereas for unit teachers, the organizational means of centralization and formalization, and the instrumental and supportive leadership effectiveness of principals were significant predictors of unit effectiveness. Hence,

> Hypothesis 10: There is no relationship between perceptions of principals with regard to the discrepancy between their real and ideal leader behavior, the degrees of centralization, formalization, and stratification, and the effectiveness of the I and R units

could not be rejected at the .05 level, whereas

> Hypothesis 11: There is no relationship between perceptions of unit leaders with regard to the discrepancy between the real and ideal leader behavior of principals, the degrees of centralization, formalization, and stratification, and the effectiveness of the I and R units

and

> Hypothesis 12: There is no relationship between perceptions of unit teachers with regard to the discrepancy between the real and ideal leader behavior of principals, the degrees of centralization, formalization, and stratification, and the effectiveness of the I and R units

in part were rejected at the .05 and .01 levels of significance.

Analysis of the Ancillary Questions

One-way (fixed-effects) analysis of variance was utilized to test ancillary questions one through four, which concern differences in the perceptions of principals, unit leaders, and unit teachers with regard to the real and ideal leader behavior of principals, the organizational-structural dimensions, and I and R unit total effectiveness. Table 15 contains a summary of the analyses of variance for these ancillary questions (see Appendix G for the means of the three reference groups' perceptions of the real and ideal leader behavior of principals). The F ratios reflected significant differences between the perceptions of the three reference groups with regard to (1) the real supportive and participative leader behavior of principals, (2) the ideal instrumental leader behavior of principals, and (3) the degrees of centralization and stratification.

Scheffé post hoc tests were performed in order to identify the pairwise differences among mean scores which accounted for the significant F ratios.[3] The results of these tests indicated that there were significant differences between:

1. the perceptions of principals and unit teachers ($\alpha = .01$) with regard to the real supportive leader behavior of principals,
2. the perceptions of principals and unit leaders ($\alpha = .05$), and principals and unit teachers ($\alpha = .001$), with regard to the real participative leader behavior of principals,
3. the perceptions of principals and unit leaders ($\alpha = .025$) with regard to the ideal instrumental leader behavior of principals,

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[3] William L. Hays, STATISTICS FOR PSYCHOLOGISTS, (New York: Holt, Rinehart, and Winston, 1963), p. 484.

TABLE 15

ANALYSIS OF VARIANCE SUMMARY FOR ANCILLARY QUESTIONS ONE THROUGH FOUR

Variable	Mean Square Between	Mean Square Within	F-Ratio
Real Instrumental Leadership	.39	20.01	.02
Real Supportive Leadership	350.39	46.43	7.55**
Real Participative Leadership	167.05	13.37	12.50**
Ideal Instrumental Leadership	63.77	10.84	5.88*
Ideal Supportive Leadership	37.38	12.97	2.88
Ideal Participative Leadership	6.18	4.44	1.39
Centralization	12,596.92	65.95	191.00**
Formalization	29.51	22.09	1.34
Stratification	494.08	59.61	8.29**
I & R Unit Total Effectiveness	147,998.10	138,823.30	1.07

*significant at or beyond the .005 level
**significant at or beyond the .001 level

4. the perceptions of principals and unit leaders (α = .001), and principals and unit teachers (α = .001), with regard to the degree of centralization, and

5. the perceptions of principals and unit teachers (α = .001) with regard to the degree of stratification.

Pearson product-moment correlations were used to test the final ancillary question, which concerns the relationship between school size (number of students) and the independent and dependent variables. Table 16 contains the correlations between school size and these variables.

TABLE 16

CORRELATIONS BETWEEN SCHOOL SIZE AND INDEPENDENT AND DEPENDENT VARIABLES

Variables	School Size
Instrumental Leadership	-.066
Supportive Leadership	.155
Participative Leadership	.171
Centralization	.441*
Formalization	.081
Stratification	.201
I & R Unit Total Effectiveness	.206

*significant at or beyond the .01 level

This table indicates that there was a significantly positive relationship between school size and the degree of centralization. All other relationships were not significant at the .05 level.

Summary

This chapter contained a preliminary analysis of the sample data and the results of the correlation analyses used to examine hypotheses one through nine, the linear regression analyses used to examine hypotheses ten through twelve, the one-way (fixed-effects) analyses of variance used to examine ancillary questions one through four, and the correlation analysis used to examine the final ancillary question. Chapter IV contains the summary, findings, conclusions, and implications of the study.

CHAPTER IV

SUMMARY, FINDINGS AND CONCLUSIONS, AND IMPLICATIONS

This chapter consists of three sections. The first contains a summary of the study as presented in the first three chapters. Section two contains the findings and conclusions of the study. The third section identifies the implications of the study for theory, research, and practice.

Summary of the Study

The results of several studies indicated that there was substantial variation among I and R units with regard to the degree to which they met the stated performance objectives developed by the Wisconsin Research and Development Center.[1] Furthermore, it was noted that no systematic attempt to ascertain which variables affect the effectiveness of the I and R units had been reported. Hence, the purpose of this study was to (1) identify certain factors which theoretically appeared to be related to unit effectiveness, (2) operationalize these factors by adopting and/or developing measures which validly and reliably reflected them, and (3) empirically determine the relationships of these variables to I and R unit effectiveness.

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[1] Roland J. Pellegrin, SOME ORGANIZATIONAL CHARACTERISTICS OF MULTIUNIT SCHOOLS, Working Paper No. 22, (Madison: Wisconsin Research and Development Center for Cognitive Learning, 1969), pp. 3, 4; Herbert J. Klausmeier, Mary R. Quilling, and Juanita S. Sorenson, THE DEVELOPMENT AND EVALUATION OF THE MULTIUNIT ELEMENTARY SCHOOL, 1966-70, Technical Report No. 158, (Madison: Wisconsin Research and Development Center for Cognitive Learning, 1971), p. 9; Roderick A. Ironside, THE 1971-72 NATIONWIDE INSTALLATION OF THE MULTIUNIT/IGE MODEL FOR ELEMENTARY SCHOOLS: A PROCESS EVALUATION. A study conducted under contract with the Office of Program Planning and Evaluation, U. S. Office of Education, Department of Health, Education, and Welfare, OE Contract Number 0-71-3705. (Durham: Educational Testing Service, 1972), pp. 129-131.

A literature review of selected theories led to the assumption that the leader behavior of principals and the organizational structure of the IGE/MUS-Es were related to the effectiveness of the I and R units. Specifically, the leader behavior of principals was operationalized in terms of three oblique factors identified by House from a pool of thirty-five leader behavior items: (1) instrumental leadership (IL), (2) supportive leadership (SL), and (3) participative leadership (PL). The IL and PL factors consist primarily of items taken from the Initiating Structure and Consideration subscales, respectively, of the Leader Behavior Description Questionnaire-Form XII (LBDQ-XII). The PL factor consists of items developed by House and items taken from the Consideration subscale of the LBDQ-XII which reflect participative leadership.[2]

The organizational structure of the IGE/MUS-Es was conceived in terms of three of Hage's organizational means, or input variables: (1) centralization, or the degree to which power is distributed in an organization, (2) formalization, or the degree of job codification in an organization and the latitude tolerated within the rules defining the job, and (3) stratification, or the differential distribution of rewards to the role incumbents of an organization.[3] Centralization was operationalized in terms of the frequency with which unit leaders and unit teachers participated in decision making, formalization in terms of the range of variation allowed in job performance, and stratification in terms of the informal "pecking order" associated with unit leaders and unit teachers. Finally, I and R unit effectiveness was operationalized in terms of the performance objectives for I and R units developed by the Wisconsin Research and Development Center.[4]

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[2] Robert J. House and Gary Dessler, "The Path-Goal Theory of Leadership: Some Post Hoc and A Priori Tests." Paper presented at The Second Leadership Symposium: Contingency Approaches to Leadership, Southern Illinois University, Carbondale, 1973. (Mimeographed.)

The validity of the I and R Unit Operations Questionnaire was determined by submitting it to three panels of experts prior to the pilot test. The reliability of the total survey instrument was obtained twice, once in the pilot study and again in the main study. The Questionnaire was accepted as being content valid and the survey instrument as evidencing a high degree of reliability.

The study population consisted of a stratified random sample of 50 IGE/MUS-Es in 11 states which had been operational for two or more years and which met the following minimal standards recommended by the Wisconsin Research and Development Center: the school (1) is fully unitized, (2) has multiage grouping in each I and R unit, (3) has an Instructional Improvement Committee which meets at least once per week, and (4) applies the Instructional Programming Model to at least one curricular area.[5] Of the 1,016 survey instruments sent to principals, unit leaders, and unit teachers, a total of 922 were returned, for a response rate of 90.8 per cent.

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[3] Jerald Hage, "An Axiomatic Theory of Organizations," ADMINISTRATIVE SCIENCE QUARTERLY, 10 (December, 1965), 293.

[4] Herbert J. Klausmeier, et al., INDIVIDUALLY GUIDED EDUCATION AND THE MULTIUNIT ELEMENTARY SCHOOL: GUIDELINES FOR IMPLEMENTATION, (Madison: Wisconsin Research and Development Center for Cognitive Learning, 1971), pp. 91-126.

In order to determine empirically the interrelationships of principal leader behavior, the organizational-structural dimensions, and I and R unit effectiveness, the following null hypotheses were tested:

1. There is no relationship between perceptions of principals with regard to the discrepancy between their real and ideal leader behavior and their perceptions of the effectiveness of the I and R units.

2. There is no relationship between perceptions of unit leaders with regard to the discrepancy between the real and ideal leader behavior of principals and their perceptions of the effectiveness of the I and R units.

3. There is no relationship between perceptions of unit teachers with regard to the discrepancy between the real and ideal leader behavior of principals and their perceptions of the effectiveness of the I and R units.

4. There is no relationship between perceptions of principals with regard to the discrepancy between their real and ideal leader behavior and their perceptions of the degrees of centralization, formalization, and stratification.

5. There is no relationship between perceptions of unit leaders with regard to the discrepancy between the real and ideal leader behavior of principals and their perceptions of the degrees of centralization, formalization, and stratification.

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[5] Ironside, THE 1971-72 NATIONWIDE INSTALLATION OF THE MULTIUNIT/IGE MODEL FOR ELEMENTARY SCHOOLS, Vol. I., p. 15.

6. There is no relationship between perceptions of unit teachers with regard to the discrepancy between the real and ideal leader behavior of principals and their perceptions of the degrees of centralization, formalization, and stratification.

7. There is no relationship between perceptions of principals with regard to the degrees of centralization, formalization, and stratification and their perceptions of the effectiveness of the I and R units.

8. There is no relationship between perceptions of unit leaders with regard to the degrees of centralization, formalization, and stratification and their perceptions of the effectiveness of the I and R units.

9. There is no relationship between perceptions of unit teachers with regard to the degrees of centralization, formalization, and stratification and their perceptions of the effectiveness of the I and R units.

10. There is no relationship between perceptions of principals with regard to the discrepancy between their real and ideal leader behavior, the degrees of centralization, formalization, and stratification, and the effectiveness of the I and R units.

11. There is no relationship between perceptions of unit leaders with regard to the discrepancy between the real and ideal leader behavior of principals, the degrees of centralization, formalization, and stratification, and the effectiveness of the I and R units.

12. There is no relationship between perceptions of unit teachers with regard to the discrepancy between the real and ideal leader behavior of principals, the degrees of centralization, formalization, and stratification, and the effectiveness of the I and R units.

In addition, answers to the following ancillary questions were obtained:

1. Is there any difference between perceptions of principals, unit leaders, and unit teachers with regard to the real leader behavior of principals?

2. Is there any difference between perceptions of principals, unit leaders, and unit teachers with regard to the ideal leader behavior of principals?

3. Is there any difference between perceptions of principals, unit leaders, and unit teachers with regard to the degrees of centralization, formalization, and stratification?

4. Is there any difference between perceptions of principals, unit leaders, and unit teachers with regard to the effectiveness of the I and R units?

5. Is there any relationship between school size and:

    a. the discrepancy between the real and ideal leader behavior of principals?

    b. the degrees of centralization, formalization, and stratification?

    c. the effectiveness of the I and R units?

Pearson product-moment correlations were utilized to test hypotheses one through nine, stepwise linear regression analysis to test hypotheses ten through twelve, one-way (fixed-effects) analysis of variance to test ancillary questions one through four, and Pearson product-moment correlations to test the final ancillary question. The .05 level of significance was established for all statistical tests.

Findings and Conclusions

This section contains a summary of the findings obtained from the analyses of data covering the hypotheses and ancillary questions tested in this study and the conclusions drawn from these tests.

Findings

The results of the data analysis for the hypotheses indicated that:

1. There were no statistically significant relationships between principals' satisfaction with their leader behavior and their perceptions of (a) I and R unit effectiveness and (b) the organizational-structural dimensions. The relationships between principals' satisfaction with their instrumental, supportive, and participative leader behavior and their perceptions of (a) I and R unit effectiveness and (b) the degree of centralization were positive, whereas those between the leader behavior subscales and the degrees of formalization and stratification were negative.

2. There were statistically significant positive relationships between unit leaders' and unit teachers' perceptions of the instrumental, supportive, and participative leadership effectiveness of principals and I and R unit effectiveness.

3. There were statistically significant positive relationships between unit leaders' perceptions of (a) the participative leadership effectiveness of principals and the degree of centralization and (b) instrumental, supportive, and participative leadership effectiveness and the degree of stratification, whereas there was a statistically significant negative relationship between (c) instrumental leadership effectiveness and the degree of formalization. The positive relationships between instrumental and supportive leadership effectiveness and the degree of centralization and the negative relationships between supportive and participative leadership effectiveness and the degree of formalization were not significant at the .05 level.

4. There were statistically significant positive relationships between unit teachers' perceptions of the instrumental, supportive, and participative leadership effectiveness of principals and (a) I and R unit effectiveness and (b) the degrees of centralization and stratification, whereas there was a statistically significant negative relationship between (c) instrumental leadership effectiveness and the degree of formalization. The positive relationships between supportive and participative leadership effectiveness and the degree of formalization were not significant at the .05 level.

5. There was a statistically significant negative relationship between principals' perceptions of the degree of formalization and I and R unit effectiveness. The

positive relationship between centralization and unit effectiveness and the negative relationship between stratification and unit effectiveness were not significant at the .05 level.

6. There were statistically significant positive relationships between unit leaders' and unit teachers' perceptions of the degrees of centralization and stratification and I and R unit effectiveness, whereas there was a statistically significant negative relationship between the degree of formalization and unit effectiveness.

7. For principals, there were no statistically significant predictors of I and R unit effectiveness.

8. For unit leaders, the degrees of centralization, formalization, and stratification were statistically significant predictors of I and R unit effectiveness.

9. For unit teachers, the degrees of centralization and formalization and the instrumental and supportive leadership effectiveness of principals were statistically significant predictors of I and R unit effectiveness.

The results of the data analysis for the ancillary questions indicated that:

1. There were no statistically significant differences between perceptions of principals, unit leaders, and unit teachers with regard to the real instrumental leader behavior of principals.

2. There was a statistically significant difference between perceptions of principals and unit teachers with regard to the real supportive leader behavior of principals.

3. There were statistically significant differences between perceptions of (a) principals and unit leaders and (b) principals and unit teachers with regard to the real participative leader behavior of principals.

4. There was a statistically significant difference between perceptions of principals and unit leaders with regard to the ideal instrumental leader behavior of principals.

5. There were no statistically significant differences between perceptions of principals, unit leaders, and unit teachers with regard to the ideal supportive and participative leader behavior of principals.

6. There were statistically significant differences between perceptions of (a) principals and unit leaders and (b) principals and unit teachers with regard to the degree of centralization.

7. There were no statistically significant differences between perceptions of principals, unit leaders, and unit teachers with regard to the degree of formalization.

8. There was a statistically significant difference between perceptions of principals and unit teachers with regard to the degree of stratification.

9. There was a statistically significant relationship between school size (number of students) and the three reference groups' perceptions of the degree of centralization.

Conclusions

Based on the findings of the study, the following conclusions were drawn:

1. With the exception of the correlation between the degree of formalization and I and R unit effectiveness, there were no significant relationships between principals' perceptions of the independent and dependent variables, nor were any of the independent variables significant predictors of unit effectiveness. On the other hand, the small amount of variation of scores evidenced by principals may have tended to depress the correlations between the independent and dependent variables for this reference group. Furthermore, although the F tests indicated that none of the predictor variables accounted for a significant amount of the variation of unit effectiveness, the organizational mean of formalization, which explained 9.46 per cent of the variation of the dependent variable, is of substantive interest ($\alpha = .057$).

2. With the exception of the correlations between (a) the instrumental and supportive leadership

effectiveness of principals and the degree of centralization and (b) those between supportive and participative leadership effectiveness and the degree of formalization, there were significant relationships between unit leaders' perceptions of the independent and dependent variables. In addition, the organizational-structural dimensions were significant predictors of I and R unit effectiveness. Formalization and centralization were of nearly equal potency to the regression equation, whereas stratification was somewhat less potent. It is of interest, however, that, had formalization been withheld from the regression equation, the leader behavior subscales probably would have played an important role in explaining the variation of unit effectiveness.

3. With the exception of the correlations between the supportive and participative leadership effectiveness of principals and the degree of formalization, there were significant relationships between unit teachers' perceptions of the independent and dependent variables. In addition, the organizational means of centralization and formalization and the instrumental and supportive leadership effectiveness of principals were significant predictors of I and R unit effectiveness. Centralization was the most potent variable in the regression equation, followed by formalization and supportive leadership effectiveness, which were of nearly equal potency, and instrumental leadership effectiveness. It is of interest, however, that, had centralization been withheld from the regression equation, participative leadership effectiveness probably would have explained a significant amount of the variation of unit effectiveness.

4. There were significant differences between (a) perceptions of principals and unit leaders with regard to the ideal instrumental leader behavior of principals, (b) perceptions of principals and unit teachers with regard to the real supportive leader behavior of principals and the degree of stratification, and (c) perceptions of principals and unit leaders, and principals and unit teachers, with regard to the real participative leader behavior of principals and the degree of centralization. In addition, there was a significant relationship between school size (number of students) and the three reference groups' perceptions of the degree of centralization.

Implications for Theory, Research, and Practice

This section is subdivided into two parts. The first contains the implications of the study for theory and research. The second contains the implications of the study for the operation of I and R units.

Implications for Theory and Research

The results of the data analyses for unit leaders and unit teachers strongly supported Hage's propositions that (1) the higher the centralization, the higher the production (effectiveness), and (2) the higher the stratification, the higher the production. Hence, it is recommended that these input variables be utilized in future research concerned with other aspects of MUS-E effectiveness (e.g., the effectiveness of the Instructional Improvement Committee).

On the other hand, Hage's proposition that the higher the centralization, the higher the formalization, received mixed support. For principals, these organizational means correlated negatively (-.117), whereas for unit leaders, they evidenced a slightly positive relationship (.042), and for unit teachers, a significantly positive relationship (.152). Furthermore, Hage's derived corollaries that (1) the higher the stratification, the higher the formalization, and (2) the higher the centralization, the higher the stratification, also received mixed support. For principals, these two sets of variables evidenced slightly positive relationships (.084 and .026, respectively), whereas for unit leaders, they evidenced slightly negative (-.039) and positive (.128) correlations, and for unit teachers, positive (.105) and significantly positive (.294) relationships. Finally, Hage's derived corollary that the higher the formalization, the higher the production, was not supported. For all three reference groups, this organizational mean evidenced a significantly negative relationship with unit effectiveness. Hence, it further is suggested that Hage's axiomatic theory of organizations be reexamined and/or reconceptualized before being used in research pertaining to educational institutions.

As noted in Chapter I, the organizational-structural dimensions, rather than House's situational variables, were utilized in this study. Hence, it is recommended that future empirical research studies examine the interrelationships of principal leader behavior, House's situational variables, and some aspect of MUS-E effectiveness (e.g., I and R unit or IIC effectiveness).

Additional questions which appear to be worthy of consideration are:

1. Would a case study of the same phenomena reveal relationships similar to those found in this study?
2. Would a replication of this study across a different sample of IGE/MUS-Es reveal relationships similar to those found in this study?
3. Are there changes in the relationships found in this study over time—i.e., would similar results obtain after five years of operation?
4. Is I and R unit effectiveness related to student achievement?
5. Are there organizational variables other than those examined in this study which are related to I and R unit effectiveness or to student achievement?

Implications for Practice

The results of the data analysis indicated that, for unit leaders and unit teachers, the principal leader behavior subscales and unit effectiveness evidenced significantly positive relationships. The implication of these findings is that principals of IGE/MUS-Es should utilize judiciously those behaviors indicative of instrumental leadership (clarifying expectations, specifying procedures to be followed, assigning specific tasks), supportive leadership (being friendly and approachable, looking out for the personal welfare of unit members, helping unit members make working on their tasks more pleasant), and participative leadership (consulting with unit members before taking action, allowing unit members to influence his/her decisions, asking unit members for suggestions on what assignments should be made). This implication is congruent with the findings of empirical research related to leadership theory and, specifically, that research delineating the importance of the nomothetic, idiographic, and transactional leadership styles within a social system.

The results of the data analysis also showed that there was a significant difference between perceptions of principals and unit leaders with regard to the ideal instrumental leader behavior of principals. The implication of this finding is that principals and unit leaders should work cooperatively to clarify the role expectations held for principals of IGE/MUS-Es. This implication is congruent with the findings of empirical research related to role conflict--specifically, the consequences of "interreference-group conflict" for person (principal effectiveness) and institution (I and R unit effectiveness).

The results of the data analysis also indicated that, for all three reference groups, the organizational mean of formalization and unit effectiveness evidenced a significantly negative relationship, whereas, for unit leaders and unit teachers, the degrees of centralization and stratification and unit effectiveness evidenced significantly positive correlations. Hence, a third implication of the study is that, in order for I and R units to operate effectively, a reasonable degree of latitude should be allowed in the manner in which unit members perform their jobs. This implication is congruent with the fact that I and R units were designed to encourage interpersonal interaction and face-to-face discussion among unit members. A fourth implication is that a moderate degree of centralization of decision making and the existence of an informal "pecking order" among unit members is not deleterious to unit operations.

Although the results of the linear regression analyses for unit leaders and unit teachers indicated that the organizational-structural dimensions and the instrumental and supportive leadership effectiveness of principals were significant predictors of unit effectiveness, it is of interest to note that, had formalization been withheld from the regression equation for unit leaders, the leader behavior subscales probably would have played an important role in explaining the variation of unit effectiveness. Similarly, had centralization been withheld from the regression equation for unit teachers, participative leadership effectiveness probably would have explained a significant amount of the variation of unit effectiveness. Hence, a fifth implication of the study is that both principal leader behavior and the organizational-structural dimensions should be considered seriously in attempting to improve the effectiveness of the I and R units. Specifically, principals should utilize judiciously behaviors indicative of instrumental, supportive, and participative leadership. In addition, IGE/MUS-Es should be characterized by a low degree of formalization, although moderate degrees of centralization and stratification are not deleterious to unit operations.

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Appendix A

Corollaries of Axiomatic Theory

Corollaries of Axiomatic Theory

1. The higher the formalization, the higher the production.
2. The higher the centralization, the higher the efficiency.
3. The lower the job satisfaction, the higher the production.
4. The lower the job satisfaction, the lower the adaptiveness.
5. The higher the production, the lower the adaptiveness.
6. The higher the complexity, the lower the production.
7. The higher the complexity, the lower the formalization.
8. The higher the production, the higher the efficiency.
9. The higher the stratification, the higher the formalization.
10. The higher the efficiency, the lower the complexity.
11. The higher the centralization, the lower the job satisfaction.
12. The higher the centralization, the lower the adaptiveness.
13. The higher the stratification, the lower the complexity.
14. The higher the complexity, the higher the job satisfaction.
15. The lower the complexity, the lower the adaptiveness.
16. The higher the stratification, the higher the efficiency.
17. The higher the efficiency, the lower the job satisfaction.
18. The higher the efficiency. the lower the adaptiveness.
19. The higher the centralization, the higher the stratification.
20. The higher the formalization, the lower the job satisfaction.
21. The higher the formalization, the lower the adaptiveness.

Appendix B

Major Components of IGE

Major Components of IGE

1. An organization for instruction and a related administrative organization at the building and central office level, collectively called the MUS-E. This organizational/administrative arrangement is designed to provide for educational and instructional decision making at appropriate levels; open communication among students, teachers, and administrators; and accountability by educational personnel at various levels.

2. A model of instructional programming for the individual student, and related guidance procedures, designed to provide for differences among students in their rates and styles of learning, level of motivation, and other characteristics and also to take into account all the educational objectives of the school.

3. Curriculum materials, related statements of instructional objectives, and criterion-referenced tests which can be adopted or adapted by the staff of individual schools to suit the characteristics of the students attending the particular school.

4. A model for developing measurement tools and evaluation procedures including preassessment of children's readiness, assessment of progress and final achievement with criterion-referenced tests, feedback to the teacher and child, and evaluation of the IGE design and its components.

5. A program of home-school communications that reinforces the school's efforts by generating the interest and encouragement of parents and other adults whose attitudes influence pupil motivation and learning.

6. Facilitative environments in school buildings, school system central offices, state education agencies, and teacher education institutions. Helpful in producing these environments are: (a) a staff development program which includes inservice and campus-based educational programs to prepare personnel for the new roles implied by the other components outlined above; (b)

state networks comprised of the state education agency, local school systems, and teacher education institutions to demonstrate, install, and maintain IGE schools and components; and (c) within-state leagues or other networks of local school systems and support agencies to generate new ideas and secure consultant help.

7. Continuing research and development to generate knowledge and to produce tested materials and procedures. The primary elements here are development and development-based research to refine all the IGE components and research on learning and instruction to generate knowledge that will lead to improved second generation components or their replacements.*

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*Source: Herbert J. Klausmeier, Mary R. Quilling, and Juanita S. Sorenson, THE DEVELOPMENT AND EVALUATION OF THE MULTIUNIT ELEMENTARY SCHOOL, 1966-70, (Madison: Wisconsin Research and Development Center for Cognitive Learning, 1971), pp. 1, 3.

Appendix C

Instrumentation

BEST COPY AVAILABLE

I AND R UNIT OPERATIONS SURVEY

EXPERIMENTAL COPY

You are participating in a study sponsored by the Wisconsin Research and Development Center for Cognitive Learning and the University of Wisconsin-Madison Department of Educational Administration. Its purpose is to determine the variables which are important in contributing to the operations of an I and R unit. As you consider each of the questions in the following survey, think and respond from the viewpoint of your present position. All responses will remain confidential and none will be identified by person.

When you have completed the survey, seal it in the enclosed envelope and return it to the teacher designated to return the surveys to the Center.

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PRINCIPAL LEADER BEHAVIOR DESCRIPTION (Form P)

Please indicate in this section how you believe you actually behave and how you believe you should behave as a leader in your school. Each item describes a specific kind of leader behavior. Mark the frequency with which you believe you do and should engage in each kind of behavior.

DIRECTIONS:
1. READ each item carefully.
2. THINK how frequently you actually engage in and ideally should engage in the behavior described by the item.
3. INDICATE your answers for each statement of the questionnaire according to the following illustration:

MY ACTUAL BEHAVIOR	MY IDEAL BEHAVIOR
5 I always act this way.	5 I should always act this way.
4 I often act this way.	4 I should often act this way.
3 I occasionally act this way.	3 I should occasionally act this way.
2 I seldom act this way.	2 I should seldom act this way.
1 I never act this way.	1 I should never act this way.

MY ACTUAL BEHAVIOR		MY IDEAL BEHAVIOR
______	1. I am friendly and approachable.	______
______	2. I consult with staff before taking action.	______
______	3. I keep to myself.	______
______	4. I do little things to make it pleasant to be a member of the staff.	______
______	5. I help staff members overcome problems which stop them from carrying out their task.	______
______	6. I put suggestions made by staff into operation.	______
______	7. I ask that staff members follow standard rules and regulations.	______
______	8. I decide what shall be done and how it shall be done.	______
______	9. I give serious consideration to what staff members have to say before making decisions.	______
______	10. I maintain definite standards of performance.	______

MY ACTUAL BEHAVIOR	MY IDEAL BEHAVIOR
5 I always act this way.	5 I should always act this way.
4 I often act this way.	4 I should often act this way.
3 I occasionally act this way.	3 I should occasionally act this way.
2 I seldom act this way.	2 I should seldom act this way.
1 I never act this way.	1 I should never act this way.

MY ACTUAL BEHAVIOR		MY IDEAL BEHAVIOR
______	11. I am willing to make changes.	______
______	12. I ask staff members for their suggestions concerning how to carry out assignments.	______
______	13. I make sure that my part in the school is understood.	______
______	14. I help staff members make working on their tasks more pleasant.	______
______	15. I look out for the personal welfare of staff members.	______
______	16. I consult with staff when faced with a problem.	______
______	17. I let staff members know what is expected of them.	______
______	18. I treat all staff members as my equals.	______
______	19. I schedule the work to be done.	______
______	20. I explain the way my tasks should be carried out.	______
______	21. I give advance notice of changes.	______
______	22. I ask staff members for suggestions on what assignments should be made.	______

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ORGANIZATIONAL STRUCTURE

Centralization

Directions: Circle the most appropriate answer.

Almost Always	Often	Some-times	Seldom	Almost Never	
					HOW FREQUENTLY DO STAFF MEMBERS PARTICIPATE IN DECISIONS CONCERNING . . .
1	2	3	4	5	1. the hiring of new staff members for the school?
1	2	3	4	5	2. the development of the school budget?
1	2	3	4	5	3. recommendations for the adoption of new curricular or instructional programs?
1	2	3	4	5	4. work procedures to be followed by the school staff?
1	2	3	4	5	5. room assignments, allocation of aides, etc.?
1	2	3	4	5	6. school policy or philosophy?
1	2	3	4	5	7. the evaluation of other staff members?
1	2	3	4	5	8. recommendations for new school plants and facilities being planned?
1	2	3	4	5	9. their own work assignments?
1	2	3	4	5	10. how a specific job or task is to be handled?
1	2	3	4	5	11. the selection of materials to be used in the classroom?
1	2	3	4	5	12. the development of the pupil progress reporting system?

Formalization

Directions: Circle the extent to which the following conditions exist in your building with regard to rules.

Definitely True				Definitely False	
1	2	3	4	5	13. Teachers are allowed to do almost as they please.

Definitely True				Definitely False	
1	2	3	4	5	14. Teachers expect other teachers to conform to rules and regulations.
1	2	3	4	5	15. Professional actions and decisions are highly circumscribed by rules.
1	2	3	4	5	16. Teachers are watched closely to see that they obey all rules.
1	2	3	4	5	17. Teachers feel that rules and regulations hinder them from doing their jobs.
1	2	3	4	5	18. Rules are strictly enforced by the principal.
1	2	3	4	5	19. Work rules and procedures are explicitly defined.
1	2	3	4	5	20. Procedures are maintained for resolving on-the-job problems or conflicts.

Stratification

Directions: Circle the answer which best describes your feelings regarding each statement.

Definitely True				Definitely False	SOME TEACHERS:
1	2	3	4	5	21. get first choice of instructional materials.
1	2	3	4	5	22. are not required to follow the rules and procedures as closely as others.
1	2	3	4	5	23. have more say regarding school policy.
1	2	3	4	5	24. have more status than others.
1	2	3	4	5	25. have a closer relationship with the administration.
1	2	3	4	5	26. are more able to get what they want into the school budget.
1	2	3	4	5	27. are more sought after and respected by parents and others.
1	2	3	4	5	28. have more prestige than others.

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I AND R UNIT OPERATIONS QUESTIONNAIRE

DIRECTIONS: The following items are based upon the performance objectives identified by the Wisconsin R and D Center as being the responsibility of I and R units. Please indicate how effectively the units in your school achieve these objectives by circling the response which most accurately describes, in your opinion, the operations of these units.

VE = Very effectively
E = Effectively
SE = Somewhat effectively
I = Ineffectively
VI = Very ineffectively

A. Instructional Program

The I and R units in my school, in the curricular area(s) to which they apply the Instructional Programming Model:

1. Develop and/or select outlines of skills and concepts to be learned which are appropriate to the students in the units. VE E SE I VI
2. Develop and/or select behavioral objectives related to the skill and concept outlines. VE E SE I VI
3. Specify materials, equipment, personnel, space and time needed for instruction. VE E SE I VI
4. Use a variety of materials for each of the identified instructional objectives. VE E SE I VI
5. Specify teacher activities needed for instruction. VE E SE I VI
6. Preassess students for attainment of the objectives within the first month of implementing the Instructional Programming Model. VE E SE I VI
7. Preassess students' motivational level, learning style, interest and attitudes, and special problems as soon after the preassessment of objectives attainment as the unit staffs can conduct the assessment and utilize the results. VE E SE I VI
8. Place students in initial groups in IGE curriculum areas based on preassessment results regarding achievement, learning style, motivational level, interest, or other relevant variable(s). VE E SE I VI

VE = Very effectively
E = Effectively
SE = Somewhat effectively
I = Ineffectively
VI = Very ineffectively

VE E SE I VI	9.	Use a variety of student grouping patterns in the course of a particular curriculum such as a) independent study, b) one-to-one (teacher-student), c) one-to-one (student-student), d) small group (3-11 students), e) medium group (12-19 students), f) class-sized group (20-39 students), and g) large group (more than 30 students).
VE E SE I VI	10.	Assess students for attainment of objectives after instruction.
VE E SE I VI	11.	Record assessment results in a usable form (e.g., on charts, McBee cards, lists, or individual folders).
VE E SE I VI	12.	Conduct evaluation regarding the percentage of students who attain specific objectives.
VE E SE I VI	13.	Regroup students at least every two to three weeks based on needs and attainment of objectives.
VE E SE I VI	14.	Plan for all I and R unit teachers to teach in the IGE subject-matter areas.
VE E SE I VI	15.	Conduct evaluation regarding the effectiveness of the instructional materials currently in use.
VE E SE I VI	16.	Conduct evaluation regarding the effectiveness of the instructional techniques currently in use.
VE E SE I VI	17.	Conduct evaluation regarding the effectiveness of the assessment materials currently in use.
VE E SE I VI	18.	Conduct evaluation regarding the effectiveness of the assessment techniques currently in use.

B. Staff Development

The I and R units in my school:

VE E SE I VI	19.	Participate in the school's staff development program as planned by the IIC.
VE E SE I VI	20.	Participate in the evaluation of the school's staff development plan.
VE E SE I VI	21.	Participate in the evaluation of the intern-student teacher program.

VE = Very effectively
E = Effectively
SE = Somewhat effectively
I = Ineffectively
VI = Very ineffectively

22. Meet together for at least three days prior to the opening of school:

- VE E SE I VI a. to make immediate plans regarding student grouping patterns and scheduling for the first one to two weeks of school.
- VE E SE I VI b. to make long-range plans regarding their instructional design and goals for the entire year.

VE E SE I VI 23. Meet at least one day per semester when children are not at school to extend IGE planning into other curricular areas.

C. Organizational Operations

The I and R units in my school:

VE E SE I VI 24. Schedule unit meetings regularly.

VE E SE I VI 25. Schedule at least two hours per week with one hour in a single block to plan for instruction.

VE E SE I VI 26. Hold unit meetings during the regular staff working day.

VE E SE I VI 27. Require the unit leaders, unit teachers, interns, and student teachers assigned to the respective units to attend unit meetings.

VE E SE I VI 28. Prepare and distribute an agenda to all personnel involved in the meeting prior to unit meeting time.

VE E SE I VI 29. Have their unit meetings chaired by the respective unit leaders.

VE E SE I VI 30. Focus discussion on agenda topics at unit meetings.

VE E SE I VI 31. Have consultants, teachers, IMC director (librarian), aides, and others attend unit meetings at their request.

VE E SE I VI 32. Keep minutes of unit meetings.

VE E SE I VI 33. Distribute minutes of unit meetings to total unit staff, the IIC, and others who attend unit meetings.

VE E SE I VI 34. Hold goal-setting meetings at least once per semester.

VE = Very effectively
E = Effectively
SE = Somewhat effectively
I = Ineffectively
VI = Very ineffectively

VE E SE I VI 35. Hold curriculum design meetings at least once per quarter.

VE E SE I VI 36. Hold meetings to evaluate instructional units, programs, and unit operations at least once per quarter.

VE E SE I VI 37. Hold grouping and scheduling meetings at least once every two weeks.

VE E SE I VI 38. Hold meetings whenever necessary to deal with immediate problems.

VE E SE I VI 39. Evaluate the flexibility of the schedule at least once per quarter.

VE E SE I VI 40. Assess each unit member's expertise in subject matter at least once per year.

VE E SE I VI 41. Assess each unit member's expertise in instructing various sizes and kinds of groups at least once per year.

VE E SE I VI 42. Provide at least five hours per week released time from instruction for the unit leader to plan, manage, study and conduct research.

VE E SE I VI 43. Provide at least one hour per week released time from instruction for their teachers to plan, study and conduct research.

VE E SE I VI 44. Assign aides (instructional and clerical) tasks according to broad guidelines established by the IIC and/or specific guidelines established by the unit.

VE E SE I VI 45. Assign each teacher a specialization in a curriculum area, or teaching styles to develop, so that he can act as a resource person to his unit.

VE E SE I VI 46. Identify each student in the unit with a teacher who monitors his progress during the year and takes initiative as required in the IGE subject-matter areas.

D. School-Community Relations

The I and R units in my school:

VE E SE I VI 47. Identify each student with a staff member for purposes of home-school relations, including conferences and home visits, as well as day-to-day guidance of the student and monitoring of his performance.

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VE = Very effectively
E = Effectively
SE = Somewhat effectively
I = Ineffectively
VI = Very ineffectively

VE E SE I VI 48. Report individual students' progress to parents

VE E SE I VI 49. Cooperate with the IIC in interpreting the IGE/MUS-E concept to parents and residents in the school attendance area.

VE E SE I VI 50. Cooperate with the IIC in utilizing volunteer community personnel (e.g., parents, other adults, high school and college students, and people with special expertise) in the instructional program and other school activities.

PRINCIPAL LEADER BEHAVIOR DESCRIPTION (Form T)

Please indicate in this section how you believe your principal actually behaves and how you believe he should behave as a leader in your school. Each item describes a specific kind of leader behavior. Mark the frequency with which you believe your principal does and should engage in each kind of behavior.

DIRECTIONS: 1. READ each item carefully.

2. THINK how frequently your principal actually engages in and ideally should engage in the behavior described by the item. How often does and should your principal act in the manner described?

3. INDICATE your answers for each statement of the questionnaire according to the following illustration:

PRINCIPAL'S ACTUAL BEHAVIOR	PRINCIPAL'S IDEAL BEHAVIOR
5 My principal always acts this way.	5 My principal should always act this way.
4 My principal often acts this way.	4 My principal should often act this way.
3 My principal occasionally acts this way.	3 My principal should occasionally act this way.
2 My principal seldom acts this way.	2 My principal should seldom act this way.
1 My principal never acts this way.	1 My principal should never act this way.

PRINCIPAL'S ACTUAL BEHAVIOR		PRINCIPAL'S IDEAL BEHAVIOR
______	1. My principal is friendly and approachable.	______
______	2. My principal consults with staff before taking action.	______
______	3. My principal keeps to himself/herself.	______
______	4. My principal does little things to make it pleasant to be a member of the staff.	______
______	5. My principal helps me overcome problems which stop me from carrying out my task.	______
______	6. My principal puts suggestions made by staff into operation.	______
______	7. My principal asks that staff members follow standard rules and regulations.	______

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PRINCIPAL'S ACTUAL BEHAVIOR	PRINCIPAL'S IDEAL BEHAVIOR
5 My principal always acts this way.	5 My principal should always act this way.
4 My principal often acts this way.	4 My principal should often act this way.
3 My principal occasionally acts this way.	3 My principal should occasionally act this way.
2 My principal seldom acts this way.	2 My principal should seldom act this way.
1 My principal never acts this way.	1 My principal should never act this way.

PRINCIPAL'S ACTUAL BEHAVIOR		PRINCIPAL'S IDEAL BEHAVIOR
______	8. My principal decides what shall be done and how it shall be done.	______
______	9. My principal gives serious consideration to what staff members have to say before making decisions.	______
______	10. My principal maintains definite standards of performance.	______
______	11. My principal is willing to make changes.	______
______	12. My principal asks staff members for their suggestions concerning how to carry out assignments.	______
______	13. My principal makes sure that his part in the school is understood.	______
______	14. My principal helps staff members make working on their tasks more pleasant.	______
______	15. My principal looks out for the personal welfare of staff members.	______
______	16. My principal consults with staff when faced with a problem.	______
______	17. My principal lets staff members know what is expected of them.	______
______	18. My principal treats all staff members as his equals.	______
______	19. My principal schedules the work to be done.	______
______	20. My principal explains the way his tasks should be carried out.	______
______	21. My principal gives advance notice of changes.	______
______	22. My principal asks staff members for suggestions on what assignments should be made.	______

ORGANIZATIONAL STRUCTURE

Centralization

Directions: Circle the most appropriate answer.

Almost Always	Often	Sometimes	Seldom	Almost Never	
					HOW FREQUENTLY DO YOU PARTICIPATE IN DECISIONS CONCERNING . . .
1	2	3	4	5	1. the hiring of new staff members for the school?
1	2	3	4	5	2. the development of the school budget?
1	2	3	4	5	3. recommendations for the adoption of new curricular or instructional programs?
1	2	3	4	5	4. work procedures to be followed by the school staff?
1	2	3	4	5	5. room assignments, allocation of aides, etc.?
1	2	3	4	5	6. school policy or philosophy?
1	2	3	4	5	7. the evaluation of other staff members?
1	2	3	4	5	8. recommendations for new school plants and facilities being planned?
1	2	3	4	5	9. your own work assignments?
1	2	3	4	5	10. how a specific job or task is to be handled?
1	2	3	4	5	11. the selection of materials to be used in the classroom?
1	2	3	4	5	12. the development of the pupil progress reporting system?

Formalization

Directions: Circle the extent to which the following conditions exist in your building with regard to rules.

Definitely True				Definitely False	
1	2	3	4	5	13. Teachers are allowed to do almost as they please.

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Definitely True				Definitely False	
1	2	3	4	5	14. Teachers expect other teachers to conform to rules and regulations.
1	2	3	4	5	15. Professional actions and decisions are highly circumscribed by rules.
1	2	3	4	5	16. Teachers are watched closely to see that they obey all rules.
1	2	3	4	5	17. Teachers feel that rules and regulations hinder them from doing their jobs.
1	2	3	4	5	18. Rules are strictly enforced by the principal.
1	2	3	4	5	19. Work rules and procedures are explicitly defined.
1	2	3	4	5	20. Procedures are maintained for resolving on-the-job problems or conflicts.

Stratification

Directions: Circle the answer which best describes your feelings regarding each statement.

Definitely True				Definitely False	SOME TEACHERS:
1	2	3	4	5	21. get first choice of instructional materials.
1	2	3	4	5	22. are not required to follow the rules and procedures as closely as others.
1	2	3	4	5	23. have more say regarding school policy.
1	2	3	4	5	24. have more status than others.
1	2	3	4	5	25. have a closer relationship with the administration.
1	2	3	4	5	26. are more able to get what they want into the school budget.
1	2	3	4	5	27. are more sought after and respected by parents and others.
1	2	3	4	5	28. have more prestige than others.

I AND R UNIT OPERATIONS QUESTIONNAIRE

DIRECTIONS: The following items are based upon the performance objectives identified by the Wisconsin R and D Center as being the responsibility of the I and R unit. Please indicate how effectively your unit achieves these objectives by circling the response which most accurately describes, in your opinion, the operations of your unit.

VE = Very effectively
E = Effectively
SE = Somewhat effectively
I = Ineffectively
VI = Very ineffectively

A. Instructional Program

Our I and R unit, in the curricular area(s) to which we are applying the Instructional Programming Model:

VE E SE I VI	1. Develops and/or selects outlines of skills and concepts to be learned which are appropriate to the student in the unit.
VE E SE I VI	2. Develops and/or selects behavioral objectives related to the skill and concept outlines.
VE E SE I VI	3. Specifies materials, equipment, personnel, space and time needed for instruction.
VE E SE I VI	4. Uses a variety of materials for each of the identified instructional objectives.
VE E SE I VI	5. Specifies teacher activities needed for instruction.
VE E SE I VI	6. Preassesses students for attainment of the objectives within the first month of implementing the Instructional Programming Model.
VE E SE I VI	7. Preassesses students' motivational level, learning style, interest and attitudes, and special problems as soon after the preassessment of objectives attainment as the unit staff can conduct the assessment and utilize the results.
VE E SE I VI	8. Places students in initial groups in IGE curriculum areas based on preassessment results regarding achievement, learning style, motivational level, interest, or other relevant variable(s).

BEST COPY AVAILABLE

VE = Very effectively
E = Effectively
SE = Somewhat effectively
I = Ineffectively
VI = Very ineffectively

VE E SE I VI 9. Uses a variety of student grouping patterns in the course of a particular curriculum such as a) independent study, b) one-to-one (teacher-student), c) one-to-one (student-student), d) small group (3-11 students), e) medium group (12-19 students), f) class-sized group (20-39 students), and g) large group (more than 30 students).

VE E SE I VI 10. Assesses students for attainment of objectives after instruction.

VE E SE I VI 11. Records assessment results in a usable form (e.g., on charts, McBee cards, lists, or individual folders).

VE E SE I VI 12. Conducts evaluation regarding the percentage of students who attain specific objectives.

VE E SE I VI 13. Regroups students at least every two to three weeks based on needs and attainment of objectives.

VE E SE I VI 14. Plans for all I and R unit teachers to teach in the IGE subject-matter areas.

VE E SE I VI 15. Conducts evaluation regarding the effectiveness of the instructional materials currently in use.

VE E SE I VI 16. Conducts evaluation regarding the effectiveness of the instructional techniques currently in use.

VE E SE I VI 17. Conducts evaluation regarding the effectiveness of the assessment materials currently in use.

VE E SE I VI 18. Conducts evaluation regarding the effectiveness of the assessment techniques currently in use.

B. Staff Development

Our I and R unit:

VE E SE I VI 19. Participates in the school's staff development program as planned by the IIC.

VE E SE I VI 20. Participates in the evaluation of the school's staff development plan.

VE = Very effectively
E = Effectively
SE = Somewhat effectively
I = Ineffectively
VI = Very effectively

VE E SE I VI 21. Participates in the evaluation of the intern-student teacher program.

22. Meets together for at least three days prior to the opening of school:

VE E SE I VI a. to make immediate plans regarding student grouping patterns and scheduling for the first one to two weeks of school.

VE E SE I VI b. to make long-range plans regarding our I and R unit's instructional design and goals for the entire year.

VE E SE I VI 23. Meets at least one day per semester when children are not at school to extend IGE planning into other curricular areas.

C. Organizational Operations

Our I and R unit:

VE E SE I VI 24. Schedules unit meetings regularly.

VE E SE I VI 25. Schedules at least two hours per week with one hour in a single block to plan for instruction.

VE E SE I VI 26. Holds unit meetings during the regular staff working day.

VE E SE I VI 27. Requires the unit leader, unit teachers, interns, and student teachers assigned to the unit to attend unit meetings.

VE E SE I VI 28. Prepares and distributes an agenda to all personnel involved in the meeting prior to unit meeting time.

VE E SE I VI 29. Has its unit meetings chaired by the unit leader.

VE E SE I VI 30. Focuses discussion on agenda topics at unit meetings.

VE E SE I VI 31. Has consultants, teachers, IMC director (librarian), aides, and others attend unit meetings at our request.

VE E SE I VI 32. Keeps minutes of unit meetings.

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VE = Very effectively
E = Effectively
SE = Somewhat effectively
I = Ineffectively
VI = Very ineffectively

VE E SE I VI 33. Distributes minutes of unit meetings to total unit staff, the IIC, and others who attend unit meetings.

VE E SE I VI 34. Holds goal-setting meetings at least once per semester.

VE E SE I VI 35. Holds curriculum design meetings at least once per quarter.

VE E SE I VI 36. Holds meetings to evaluate instructional units, programs, and unit operations at least once per quarter.

VE E SE I VI 37. Holds grouping and scheduling meetings at least once every two weeks.

VE E SE I VI 38. Holds meetings whenever necessary to deal with immediate problems.

VE E SE I VI 39. Evaluates the flexibility of the schedule at least once per quarter.

VE E SE I VI 40. Assesses each unit member's expertise in subject matter at least once per year.

VE E SE I VI 41. Assesses each unit member's expertise in instructing various sizes and kinds of groups at least once per year.

VE E SE I VI 42. Provides at least five hours per week released time from instruction for the unit leader to plan, manage, study and conduct research.

VE E SE I VI 43. Provides at least one hour per week released time from instruction for teachers to plan, study, and conduct research.

VE E SE I VI 44. Assigns aides (instructional and clerical) tasks according to broad guidelines established by the IIC and/or specific guidelines established by the unit.

VE E SE I VI 45. Assigns each teacher a specialization in a curriculum area, or teaching styles to develop, so that he can act as a resource person to the unit.

VE E SE I VI 46. Identifies each student in the unit with a teacher who monitors his progress during the year and takes initiative as required in the IGE subject-matter areas.

VE = Very effectively
E = Effectively
SE = Somewhat effectively
I = Ineffectively
VI = Very ineffectively

D. School-Community Relations

Our I and R unit:

VE E SE I VI	47. Identifies each student with a staff member for purposes of home-school relations, including conferences and home visits, as well as day-to-day guidance of the student and monitoring of his performance.
VE E SE I VI	48. Reports individual students' progress to parents.
VE E SE I VI	49. Cooperates with the IIC in interpreting the IGE/MUS-E concept to parents and residents in the school attendance area.
VE E SE I VI	50. Cooperates with the IIC in utilizing volunteer community personnel (e.g., parents, other adults, high school and college students, and people with special expertise) in the instructional program and other school activities.

Appendix D

IGE/MUS-E Telephone Survey

INTRODUCTION

Hello (Principal's Name):

This is (Your Name) calling for the research component of the Wisconsin Research and Development Center in Madison. We're calling all multiunit schools listed in the 1972-73 Multiunit Directory to obtain some brief descriptive information not presently available to us. The information we seek concerns your beginning date, the number of units in your school this year, and some other items. Can you take a few minutes now to answer these questions?

SCHEDULE

1. When did your school implement IGE/MUS-E?

2. Is your entire school organized into units?

3a. How many units do you have in your school this year?

   3b. How many teachers, including the unit leader, are in each unit?

   3c. How many student teachers (interns) are in each unit?

   3d. How many aides are in each unit?

   3e. What is the equivalent grade span for each unit? For example, in a graded school, what would unit ___ be?

4a. Do you have an Instructional Improvement Committee (IIC)?

   Yes (Ask Q4b and Q4c) No (Skip to Q5a)

   4b. How frequently does the IIC meet?

   4c. What is the average length of these meetings?

5a. How many schools in your district are IGE/MUS-Es?

   Two or More (Ask Q5b) One (Skip to Q6a)

   5b. Do you have a Systemwide Policy Committee (SPC)?

      Yes (Ask Q5c and Q5d) No (Skip to Q5e)

      5c. Who serves in the SPC?

      5d. When did you implement the SPC?

      5e. In your district, who performs the functions of the SPC?

6a. Is the Instructional Programming Model (IPM) being applied to at least one curricular area? (If respondent does not know what the IPM is, clarify by stating: The Instructional Programming Model is the process of identifying objectives, preassessing student mastery of objectives, providing instruction based on the results of preassessment, and conducting post assessment to determine student mastery of objectives.)

6b. Which of the Center's curriculum products are you using?

7. Did your school plan and carry out a staff development program to train other school staff members in the concepts of IGE/MUS-E?

8a. Did anyone from your school attend a three day Principal-Unit Leader Workshop before implementing the program in your school?

Yes (Ask Q8b) No (Skip to Q9a)

8b. Who attended that Workshop?

9a. Does your school maintain a record of student achievement test scores and other student data, such as socioeconomic status, by student?

Yes (Ask Q9b) No (Skip to Q10)

9b. Is it automated at the district level?

10. Does your school use a program cost accounting system—that is, cost accounting by program, not by line item?

11. Are you a teaching principal?

Yes (Skip to CLOSE) No (Skip to Q12)

12. One of the questions most frequently asked by school personnel when implementing IGE and organizing a multiunit school is: "What factors are related to unit effectiveness?" An answer to this question could indicate what factors to consider in forming effective units. Two research studies being conducted by the R & D Center deal with this question. One study looks at the compatability of unit teachers, the behavior of unit leaders, and a few other small group factors in relationship to unit effectiveness. The second study examines the leader behavior of the principal and the organizational structure of the IGE/MUS-E in relationship to unit effectiveness. If your school were selected at random from the Center's Multiunit Directory, would you be willing to participate in these studies?

Yes (Read statement below) No (Skip to CLOSE)

If your school is selected, you will hear from us by the end of October.

CLOSE: Thank you very much for taking time to help us. We greatly appreciate having this information.

DIRECTIONS FOR RECORDING RESPONSES

1. Implementation Date: record month and year

2. Fully Unitized: record a 1 if yes; a 2 if no

3a. Number of Units: record number

3b. No. Tchrs./Unit: record no./unit beside nos. representing each of the units

3c. No. Stu. Tchrs./Unit: record no./unit beside nos. representing each of the units

3d. No. Aides/Unit: record no./unit beside nos. representing each of the units

3e. Grade Span/Unit: record span/unit beside nos. representing each of the units

4a. IIC: record a 1 if yes; a 2 if no

4b. Frequency of IIC Meetings: record frequency

4c. Average Length of IIC Meetings: record average length

5a. No. IGE/MUS-Es in District: record number

5b. SPC: record a 1 if yes; a 2 if no

5c. Personnel on SPC: circle appropriate positions in column; specify position(s) if circle "other"

5d. Date SPC Implemented: record month and year

5e. Who Performs SPC Functions: circle appropriate positions in column; specify position(s) if circle "other"

6a. Applying IPM: record a 1 if yes; a 2 if no

6b. R & D Center Products: circle appropriate product(s) in column

7. Staff Development: record a 1 if yes; a 2 if no

8a. P-UL Workshop: record a 1 if yes; a 2 if no

8b. Who Attended P-UL Workshop: circle appropriate positions in column; specify position(s) if circle "other"

9a. Computerized Student Records: record a 1 if yes; a 2 if no; a 3 if DK

9b. Automated Student Records: record a 1 if yes; a 2 if no; a 3 if DK

10. Program Cost Accounting System: record a 1 if yes; a 2 if no; a 3 if DK

11. Teaching Principal: record a 1 if yes; a 2 if no

12. Participate in Study: record a 1 if yes; a 2 if no; a 3 if DK

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KEY:

S = Superintendent
CC = Curriculum Coordinator
P = Principal
UL = Unit Leader
UT = Unit Teacher
O = Other

WDRSD-WA = Word Attack Skills
WDRSD-SS = Study Skills
WDRSD-C = Comprehension
PR = Pre Reading
DMP = Developing Math. Processes
IGM = Individually Guided Motivation
ES = Environmental Science

	Implementation Date	Fully Unitized	Number of Units	Number Teachers/Unit	Number Stu. Tchrs./Unit	Number Aides/Unit	Grade Span/Unit	IIC	Frequency of IIC Meetings	Length of IIC Meetings	No. IGE/MUS-Es in District	SPC	Personnel on SPC	Date SPC Implemented	Who Performs SPC Functions	Applying IPM	R & D Center Products	Staff Development	P-UL Workshop	Who Attended P-UL Workshop	Computerized Stu. Records	Automated Stu. Records	Prog. Cost Acctg. System	Teaching Principal	Participate in Study
				1- 2- 3- 4- 5- 6- 7-	1- 2- 3- 4- 5- 6- 7-	1- 2- 3- 4- 5- 6- 7-	1- 2- 3- 4- 5- 6- 7-						S CC P UL UT O		S CC P UL UT O		WDRSD-WA WDRSD-SS WDRSD-C PR DMP IGM ES			S CC P UL UT O					
				1- 2- 3- 4- 5- 6- 7-	1- 2- 3- 4- 5- 6- 7-	1- 2- 3- 4- 5- 6- 7-	1- 2- 3- 4- 5- 6- 7						S CC P UL UT O		S CC P UL UT O		WDRSD-WA WDRSD-SS WDRSD-C PR DMP IGM ES			S CC P UL UT O					
				1- 2- 3- 4- 5- 6- 7-	1- 2- 3- 4- 5- 6- 7-	1- 2- 3- 4- 5- 6- 7-	1- 2- 3- 4- 5- 6- 7-						S CC P UL UT O		S CC P UL UT O		WDRSD-WA WDRSD-SS WDRSD-C PR DMP IGM ES			S CC P UL UT O					
				1- 2- 3- 4- 5- 6- 7-	1- 2- 3- 4- 5- 6- 7-	1- 2- 3- 4- 5- 6- 7-	1- 2- 3- 4- 5- 6- 7-						S CC P UL UT O		S CC P UL UT O		WDRSD-WA WDRSD-SS WDRSD-C PR DMP IGM ES			S CC P UL UT O					

Appendix E

Letter to State IGE Coordinators

the
Wisconsin
Research and Development Center
for Cognitive
Learning

the University of Wisconsin · 1025 West Johnson Street · Madison, Wisconsin 53706 · (608)262 - 4901

November 4, 1973

Dear

A question of practical concern which you may have been asked by educators concerned with implementing and/or improving the multiunit organization is: What factors should be considered in attempting to improve the effectiveness of the I and R units? I am conducting a research study, in partial fulfillment of the requirements for a doctoral degree, which deals with the effectiveness of these units. Specifically, my study concerns the relationship of principal leader behavior and the organizational structure of IGE/MUS-Es to I and R unit effectiveness. The results of the research should provide valuable information to educational personnel concerned with the implementation and improvement of I and R unit operations and also should provide a research base for additional empirical studies related to leader behavior, organizational structure, and I and R unit effectiveness.

The design of the study involves the administration of a survey instrument which measures the real and ideal leader behavior of principals, the organizational structure of the IGE/MUS-Es in terms of their degrees of centralization, formalization, and stratification, and the effectiveness of the I and R units.

A stratified random sample of fifty-five schools has been drawn from the 1972-1973 IGE/MULTIUNIT ELEMENTARY SCHOOL DIRECTORY. _____ of these schools are located in your state. They are: __________.

I shall phone the principals of these schools in the very near future to request their participation in the study. You have been provided this information because the Center, under whose auspices this study is being conducted, recognizes the importance of informing IGE Coordinators about research studies being conducted in their states. Should you desire additional information regarding my study, please phone me collect at the Wisconsin Research and Development Center (608/263-4260).

Sincerely,

Gary W. Gramenz
Research Assistant

GWG/pp

Appendix F

Letters to Principals and Teacher Designees

the
Wisconsin
Research and Development Center
for Cognitive
Learning

the University of Wisconsin · 1025 West Johnson Street · Madison, Wisconsin 53706 · (608)262 - 4901

November 9, 1973

Thank you very much for agreeing to participate in this study. The following directions concern the distribution, collection, and return of the enclosed survey instruments.

1. Schedule a meeting of all unit leaders and unit teachers in your school. You, the unit leaders, and the unit teachers should respond to the instruments during this meeting, which should require approximately sixty minutes.

2. Prior to the meeting, a teacher should be designated to: (a) place all the sealed envelopes in the return mailing bag, (b) seal the bag, and (c) return it to the R and D Center. Please give the enclosed message regarding the return mailing directions to the teacher designee.

3. At the meeting, you should:

    a. Distribute the "Unit Teacher" envelopes which contain the pink forms to the unit teachers.

    b. Distribute the "Unit Leader" envelopes which contain the blue forms to the unit leaders.

    c. Retain the "Principal" envelope which contains the green form.

4. Each respondent should complete his/her instrument independently during this meeting. After the instrument is completed, the respondent should put it back into its envelope, seal the envelope, and deliver it to the teacher designee responsible for collecting all instruments.

Please mail the completed instruments to the Wisconsin Research and Development Center by Wednesday, November 21, 1973.

The study in which you are participating deals with the relationship of principal leader behavior and the organizational structure of IGE/MUS-Es to I and R unit effectiveness. The results of this study should provide valuable information to educational personnel concerned with the implementation and improvement of I and R unit operations and also should provide a research base for additional empirical studies related to leader behavior, organizational structure, and I and R unit effectiveness.

The design of the study involves the administration of a survey instrument which measures the real and ideal leader behavior of principals, the organizational structure of the IGE/MUS-Es in terms of their degrees of centralization, formalization, and stratification, and the effectiveness of the I and R units. The attached copies of the instrument are for your information.

The results of this study will be reported in the form of a technical report. A copy of this report will be mailed to you when it becomes available from the Center. You may be assured that the schools and personnel who participate in the study will remain anonymous.

Please extend my gratitude to your staff for the time and cooperation they will give in assisting the Center with this study; and for your interest and help, I am sincerely appreciative.

Should you have any questions regarding the study, please phone me collect at the Center (608/263-4260). I look forward to receiving your school's responses. Thank you again.

Sincerely,

Gary W. Gramenz
Research Assistant

GWG/pp
Enc.

TO: TEACHER DESIGNEE

RE: Return Mailing Directions

Thank you very much for agreeing to collect and return the survey instruments. Each respondent should put his/her completed instrument back into the envelope, seal it, and hand it to you, the teacher designee, who is responsible for collecting and returning all instruments to the Wisconsin Research and Development Center.

Directions:

1. Make sure all sealed "Principal," "Unit Leader," and "Unit Teacher" envelopes are placed in the return mailing bag.
2. Seal the bag.
3. Mail the bag to the Wisconsin Research and Development Center.

Thank you again for your assistance.

GWG:pp

Appendix G

Means of Reference Groups Perceptions of Real and Ideal Leader Behavior of Principals

MEANS OF REFERENCE GROUPS' PERCEPTIONS OF REAL AND IDEAL LEADER BEHAVIOR OF PRINCIPALS

Reference Group	Instrumental Leadership		Supportive Leadership		Participative Leadership	
	Real	Ideal	Real	Ideal	Real	Ideal
Principals	25.00	27.39	39.90	44.37	20.10	21.55
Unit Leaders	25.08	28.91	37.79	43.76	18.62	21.33
Unit Teachers	24.97	28.39	36.28	43.18	17.61	21.07

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